

# THE AUTOMOBILE

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## TREND OF THE GERMAN AUTO INDUSTRY.

Exhibition at Leipzig Shows Many Copies of American Runabouts—Friction Drive Experimented with Also—Mercedes Factory Trying to Eliminate Change Speed Gears and Will Build Low-Priced Cars.

*From Our Own Correspondent.*

BERLIN, Oct. 22.—Only a short time ago German sportsmen and manufacturers looked down with sovereign superiority on the American automobile industry. Conditions are now different. In the past Germany has built dear but very good machines, modeled on French types, but later machines after the Mercedes pattern. More recently, however, the market for such costly machines seems to be a little exhausted and manufacturers are attempting to increase sales by building very inexpensive light cars. Those especially who have not large funds are doing so, forgetting that very great capital is the first consideration for successful low-priced mass-manufacturing. They think their success guaranteed after having copied the Oldsmobile type, more or less extensively, and, indeed, some of these imitations are very good ones.

So we find in the exhibition at Leipzig a great series of similar cars, with horizontal single cylinder motors of 4 inches and more bore and 5 to 6 inches stroke and with planetary change speed gear, with only two modifications of speed and reversing. The Oldsmobile type itself is, of course, also exhibited; especially a small racing car after this type which attracted much interest.

Another very remarkable item also con-

nected to the efforts to build cheaply is the frequent use of the friction change speed gear; not less than four factories exhibiting in all more than fifteen cars of the kind. Besides, it will be interesting for American readers to know also that the Daimler-Motoren Gesellschaft in Unterturkheim has lately made some trials with the friction change speed drive, using this gear

transmitted by one or two chains on the rear axle. As the movement of the second disc across the face of the first allows all modifications of speed whatever, the arrangement seems to be a very simple and recommendable one.

But as these friction discs must be very large, in order to avoid rapid wear, the motor and the change speed gear must be supported very high and the car becomes easily ill-shaped in appearance. To remove this difficulty the builders of the cars shown at Leipzig located the great friction disc so low that its lower edge nearly touched the ground. This might answer for cars used in town, but so little distance between the lowest point of the machinery and the ground is not permissible for use on bad roads.

Especially one of the friction change speed gears is a remarkable one, and will perhaps solve this difficult structural question. Its discs are quite unused in the

greatest speeds, as the motor then operates on the driving wheels by a friction clutch and Cardan jointed shaft. This arrangement avoids the loss of power in high speeds.

### NEW MERCEDES CONSTRUCTIONS.

Mercedes.—These well-known and famous works have exhibited a touring car and a chassis, both type 1904. The novelties



MERCEDES AND BENZ-PARSIFAL CARS EXHIBITED AT LEIPZIG, GERMANY, OCTOBER 14-25.

experimentally for lorries. These experiments of the Mercedes concern, however, had no satisfying results. The friction change speed gears in the exhibition at Leipzig are all built after one model, that is, the motor drives a great disc, serving as a fly wheel, on which another disc is pressed, which is fitted slidable on its shaft, and from this gear the motion is

will first come out in the Paris Salon, for the Daimler works sell a great deal more of their costly cars to France, America and England than to Germany, where people who are open to spend so enormous a sum for a single car are very seldom. Knowing well this circumstance these works are understood to be also about building low priced light cars. As the competition in this line is now very considerable, this is not very pleasant news for the French and German automobile industries. It is of much interest also that for these light cars side chains (not live axle) shall be used.

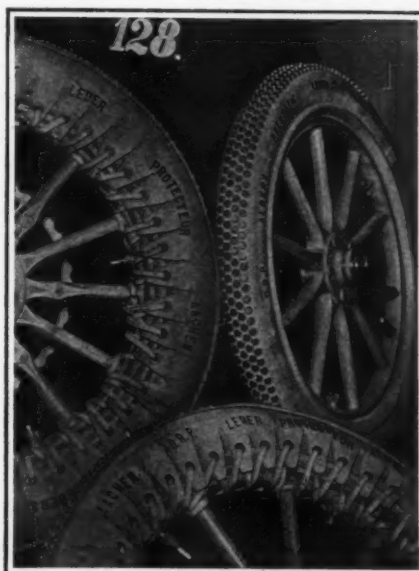
But the very last novelty of Mercedes projects is a car without change speed gears at all; but this is yet remote. Instead of replacing the change speed gear by using eight cylinders, as French and American builders have tried sometimes, the Daimler engineers intend rather a combination of the usual gasoline motor and steam engine, an idea which is not new, but becomes interesting by this great factory's intention. Its designers intend to heat the boiler by the exhausting gases of the motor, using therefor fire tubes which pass through the boiler. Thus would entirely vanish the exhausting noise, as the gasoline motor gases cool very rapidly on the tube walls contained in the boiler.

In operation it is only necessary to set at work the motor some minutes before starting, which in this little time produces steam enough to assist the motor when going. During the course of travel a sufficient quantity of steam is generated to get over nearly all gradients. If one of them should be too steep, the car is stopped and the motor allowed to go alone for a short time to obtain the necessary quantity of steam. In regular road travel, the exhaust serves sufficiently to keep plenty of steam for use on grades.

This system would be a little complicated, indeed, but would have all advantages of a steam and explosion motor. Only in starting is it necessary to turn over the

motor cylinder by hand, and for a whole day thereafter the motor would start automatically, controlled by a little lever. The water consumption is a very trifle, because steam is only wanted for starting and for hill climbs. No change speed gear at all is employed.

To be sure, it is yet far from the time that this construction has demonstrated sufficient reliability to allow such a great factory and one of so high reputation to go on the market with it. But there is no



TIRE PROTECTOR AND ANTI-SKID.

hurry at all. The works are understood to be very much occupied, having to effect orders for about \$9,000,000. The great factory in Unterturkheim is in the condition to finish ninety great cars monthly. That is more than 1,000 cars in the year, which represent a value of about \$5,000,000, as only very costly cars are built. But more remarkable than this great sum is the circumstance that the works profited nearly nothing the last year, and its branch in Marienfelde had even some loss, as is plain to be seen in the last financial report.



GERMAN 8-H.P. RACING MOTORCYCLE.

Other types are exhibited by the Benz Co., De Dietrich, Argusmotoren Gesellschaft, Otto Weiss & Co., E. Nacke, Renault Frères, and a great many other factories. The greatest interest was paid, of course, to the De Dietrich celebrated racing car, which, driven by Rougier, competed honorably in the French trials, and in the Gordon Bennett cup race, and in the race on the steep Mont Ventoux.

The Benz cars represent themselves very well indeed, especially their bodies, which are built after the best French types, and are very roomy and, nevertheless, very fine and pretty. All cars of this firm and of the firms of distinction are built in the limousine and landaulet types. The Argus cars are copied after the Mercedes type and very well finished indeed. This imitation is no reproach, for all copy to-day. Otto Weiss & Co. have built doubtless the most elegant cab of the exhibition; also the cabs of E. Nacke are very good.

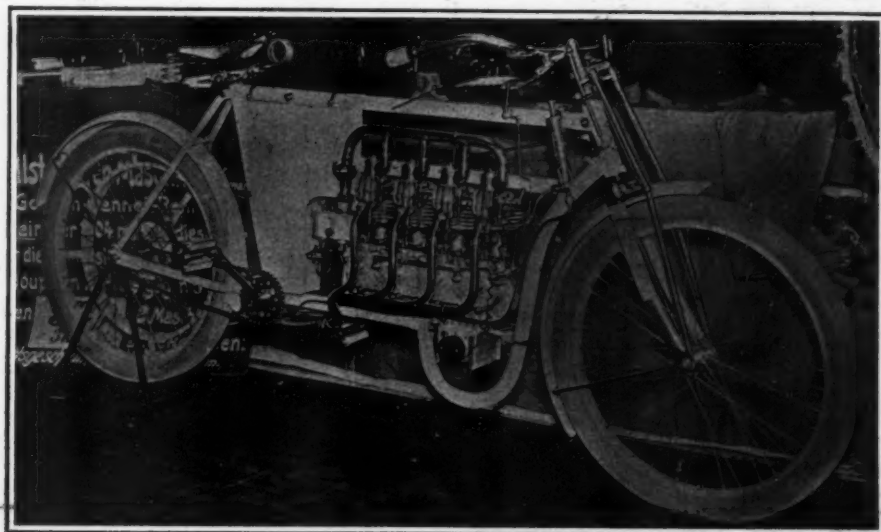
The building of cabs is actually very much followed. Ten German works at least took up the construction of cabs with motors, and in Berlin, Cologne and Hamburg many of such cabs are already used.

#### MOTOR CYCLES ON EXHIBITION.

The two most interesting motorcycles of the exhibition in Leipzig were the racing motorcycle built by Laurin & Clément with four vertical cylinders, and the motorcycle of the Express Fahrradwerke, with two inclined cylinders. The motorcycle built by Laurin & Clément makes no overloaded appearance with its four cylinders, and, although these cylinders are arranged one after the other, and, therefore, are not cooled very well, the motorcycle has a very good speed. As shown in the photograph, the motion is transmitted by bevel pinions. The two-cylinder Express-Motorcycle is remarkable by reason of its frame. These numerous connections between the frame-tubes make the cycle very solid, but too expensive for touring purposes.

Besides these two types, a great number of single cylinder motorcycles are exhibited. One of them, with a motor furnished with clutch planetary change speed gear. Power is transmitted by bevel pinions.

Tires are not well represented at the exhibition. The most attractive object is a new protector from Albers. The accompanying photograph shows the different shapes of it. The leather jacket fastened on so many places can never fly off. Slide-slip is prevented by steel points, steel rivets or plates, which are riveted on the leather.



FOUR-CYLINDER 12-H.P. RACING MOTORCYCLE, BUILT BY LAURIN & CLÉMENT.



## World's Records in Special Race at Yonkers.

### Oldfield Wins Ten-Mile Match Against Théry, Bernin and Sartori in 9:12 3-5.—Kulick's New Records.

**BARNEY OLDFIELD** recovered his lost nerve in time to win the four-cornered 10-mile match race at the Empire track, Yonkers, N. Y., on Saturday, October 29, and at the same time he made new world's records for five miles with standing start in his trial heat, in which he had Bernin as an opponent in W. G. Brokaw's 60-horsepower Renault, and for ten miles in the final heat against Sartori in A. G. Vanderbilt's 90-horsepower F.I.A.T. New track figures for five miles for the light and middle weight classes, 551 to 881 pounds and 881 to 1,432 pounds, respectively, were established in the first event of the day by the 20-h.p. Ford racer driven by F. Kulick.

No accidents or breakdowns of any kind marred the afternoon's sport, and, though the programme was short, it was of a character which sustained interest from beginning to end. The track showed the effects of a thorough grooming, being in unusually good condition, and the weather, though somewhat cool, was ideal for racing. There

horsepower Richard-Brasier car, with which he won the Gordon Bennett cup; Bernin, in W. Gould Brokaw's 60-horsepower Renault racer; Sartori, in A. G. Vanderbilt's 90-horsepower F.I.A.T., and Barney Oldfield in the 60-horsepower Peerless *Green Dragon*, would be run in two trial heats and a final, with standing starts, the distance being 10 miles in each case.

Théry and Sartori contested the first heat. Sartori drew the pole, and on the crack of the pistol jumped into the lead, gathered headway more rapidly than Théry, and gradually increased his advantage throughout the heat, winning handily in 9 min. 45.4-5 secs., Théry finishing 14 1-5 secs. later. This was the slowest heat of the match.

Théry's track work was watched with much interest by the spectators, who were curious to see how the Frenchman would fare in his first track competition. Probably the most notable feature of his driving was the manner in which he took the turns. Like Charles Schmidt in the Packard *Gray*

heat, and great driving was anticipated. Oldfield took the pole. The *Green Dragon* was expected to get decidedly the worst of the start, owing to her having but two speeds, but a muffled roar of surprise went up when, at the pistol, Oldfield, who had his machine pushed off, forged ahead rapidly, Bernin, who declined a push, making a poor start, and thus losing what would have been a decided advantage.

Oldfield set a terrific pace and kept increasing his lead to the end, finishing in 9 minutes 20 seconds, Bernin's time being 9 minutes 44.4-5 seconds. After the sixth mile it was announced that Oldfield had broken the world's track record from 1 to 5 miles with standing start.

There was an intermission of 20 minutes before the final was called, and Sartori and Oldfield came to the line, the Italian at the pole. Like the two preliminary heats, the final was a foregone conclusion, barring accidents, after the cars were well under way.

Oldfield got a little the worst of the start this time, but overtook the Italian before the first half mile had been covered, and, going like the wind, steadily widened the gap until at the finish there was a difference of 27 1-5 seconds between the racers. Oldfield's time was 9 minutes 12.3-5 sec-



OLDFIELD IN PEERLESS "GREEN DRAGON," AT LEFT, AND BERNIN IN RENAULT, AT RIGHT, AT STARTING LINE IN TRIAL HEAT.

was very little dust on the turns, and no wind. The attendance was about 5,000.

The first event was a five-mile exhibition by the Ford skeleton, and Kulick started in with a rush that kept the spectators, who had prepared for a mild "filler" as a preliminary, in a state of excitement throughout the trial. The first mile was spun off, with flying start, in 59 seconds flat, a new figure for the light and medium weight classes, and every succeeding announcement made by Prunty, the Megaphone Man, was followed by the brief statement: "World's record."

Kulick's machine ran with the utmost regularity and was faultlessly driven. The crowd cheered heartily when the new record, 4 minutes 43 3-5 seconds, was announced. The best previous times for the mile and five miles were 59 4-5 seconds and 5 minutes 1 second, respectively.

A five-mile exhibition by the 25-horsepower Standard racer, driven by Phil Adams, followed, but the car failed to do better than 1 minute 12 3-5 seconds for the first mile and 5 minutes 56 2-5 seconds for the five miles, which seemed tame after the snappy work of the Ford car.

Announcement was then made that the match race between Théry, driving the 80-

Wolf in the Vanderbilt Cup race, he seemed to do a great deal of skidding before striking the sharpest part of the turns, and he frequently made the more excitable occupants of the grandstand hold their breath when his rear wheels slid out and left the car pointing toward the fence. On the straights and at the corners he kept his front axle just about 18 inches from the fence, all the way around.

He certainly made a splendid display of skill and nerve, and looking at his driving one could easily figure why he had won the Gordon Bennett. When he came in after the heat it was seen that nearly all the tread on the tire of his right front wheel was ground away, leaving the fabric exposed and giving him two front wheels of practically unequal diameters. On the corners, after his rear wheels had skidded so that the car was momentarily pointed for the fence, he straightened up with apparent ease, though the skidding cost him some time in each round. He had had the racer out of the Custom's House only two days, and it had not been properly tuned up for track racing. The sprockets were not just the correct diameter for one thing.

Oldfield and his conqueror at Brighton Beach, Bernin, were paired in the second

onds, and the driver of the pea-green car was given an uproarious cheering when it was announced that he had made a new world's record by two-fifths of a second.

This ended the racing for the day. The pursuit race, in which Théry and Bernin were to have engaged, was called off. Endeavors were unsuccessfully made to get Oldfield to go after the mile record, and the Ford to go after figures up to 10 miles.

Sartori complained after the race that he had been forced to run on his third speed all the time, never having been able to get in his fourth. He expressed an intense desire to meet Oldfield on the road for a race at any distance. Sartori got into trouble in driving his big car home, being arrested for speeding; but on explaining that owing to the high gear he was compelled to run fast for a little distance, and then let the car coast, he was discharged.

Following are the summaries:  
Five mile exhibition by 20-horsepower Ford, driven by Frank Kulick.

Miles.	Time, M. S.
1.....	0:59
2.....	1:56 2-5
3.....	2:53 1-5
4.....	3:48 2-5
5.....	4:43 4-5

Five mile exhibition by 25-horsepower Standard, driven by Phil. Adams.

Miles.	Time.
	M. S.
1.....	1:12 3-5
Intermediate times not announced.	
5.....	5:56 2-5

Special match race, 10 miles; first heat; starters, Théry and Sartori.

Miles.	Sartori.	Théry.
1.....	1:09 3-5	1:10 4-5
2.....	2:08 1-5	2:10 1-5
3.....	3:05 4-5	3:09
4.....	4:03	4:07 4-5
5.....	5:00	5:06 2-5
6.....	5:56 2-5	6:05
7.....	6:53 2-5	7:03 2-5
8.....	7:50 2-5	8:02
9.....	8:47 4-5	9:01
10.....	9:45 4-5	10:00

Special match race, 10 miles; second heat; starters, Oldfield and Bernin.

Miles.	Oldfield.	Bernin.
1.....	1:06	1:11 2-5
2.....	1:59 2-5	2:10 1-5
3.....	2:52 2-5	3:07
4.....	3:46 2-5	4:03 2-5
5.....	4:41	5:00 2-5
6.....	5:35	5:57 3-5
7.....	6:31 2-5	6:54 4-5
8.....	7:28 3-5	7:51 3-5
9.....	8:25 3-5	8:48
10.....	9:20	9:44 4-5

Special match race, 10 miles; final heat; starters, Oldfield and Sartori.

Miles.	Oldfield.	Sartori.
1.....	1:05 3-5	1:08 2-5
2.....	1:59 1-5	2:05
3.....	2:53 3-5	3:01 1-5
4.....	3:47 3-5	3:58 2-5
5.....	4:42	4:55
6.....	5:36 3-5	5:51
7.....	6:31 2-5	6:47
8.....	7:25 2-5	7:44
9.....	8:19 1-5	8:42
10.....	9:12 3-5	9:39 4-5

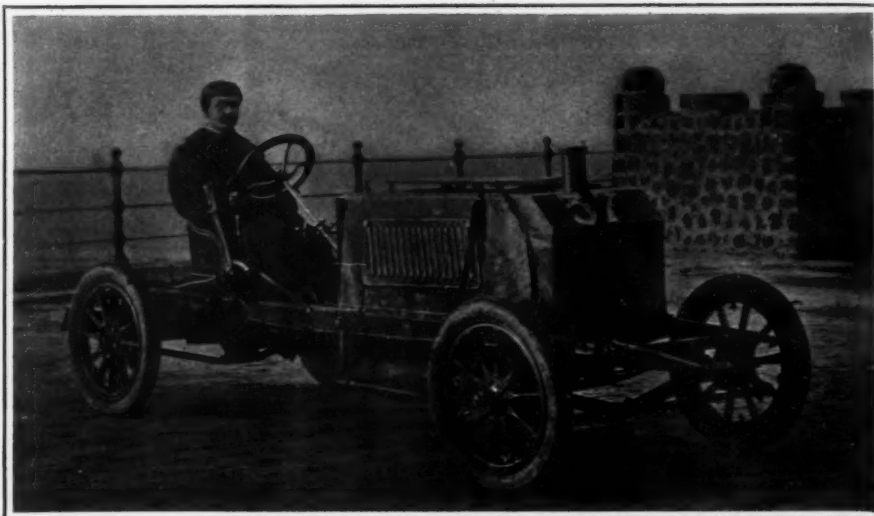
A trial of mechanically driven transport wagons was held near Paris during the first week of last month by the French military authorities. During eight successive days the wagons were required to cover a distance of 510 kilometers (316 miles) and various tests were applied. The War Office announced that the first three prize winners would be bought by the government, but only three of the ten wagons entered appeared for the test. Builders complain that not sufficient notice was given them to finish their vehicles in time

## Blackpool Mile and Kilometer Trials.

Special Correspondence.

LIVERPOOL, Eng., Oct. 18.—Two days' straightaway speed trials were run off on Friday and Saturday, October 14 and 15, on the smooth white asphalt boulevard along the shore at Blackpool, the well-known seaside resort. The 250 entries were divided into nine classes, mainly on the

light cars, then the touring cars, and finally the racing machines. The first day, T. Tessier, on a 4 1-2-horsepower Bat motorcycle, won in the class for cycles weighing less than 170 pounds, covering the mile with standing start in 1:13 2-5, or at the rate of forty-nine miles an hour, and in the



CLIFFORD EARP IN 80-HORSEPOWER NAPIER, HOLDER ENGLISH KILOMETER RECORD.

basis of selling price. There were two classes for motorcycles, five for touring cars and two for racing cars. To give variety to the racing, Friday's events were run over a mile course, with standing start, while on Saturday the flying kilometer was essayed by all.

A crowd estimated at between 60,000 and 80,000 lined the course on either side. The course was roped off and patrolled by policemen, who kept it clear. The spectators were kept informed of the results of the events in an ingenious way. The trials were run in heats of two competitors each, one of the competitors wearing a blue sash and the other a white sash. After each pair crossed the finish line a blue or white flag was raised, according to the color of the winner, and similar flags were hoisted on poles along the whole length of the course.

TESSIER FASTEST ON A MOTORCYCLE.

Each day's racing opened with the motorcycle events, followed by trials of the

second class, for machines of any weight, won with the same machine in 1:15.

There were thirteen starters in the class for touring cars costing £250 (\$1,250) or less, and they were sent off in pairs. A 10-horsepower Duryea was first in the final, in 1:49 2-5, but was afterward disqualified, on the ground that the selling price was more than £250, so that first place was given to a 10-horsepower Speedwell, and second place to an 8-horsepower Cadillac.

DARRACQS WIN IN TWO CLASSES.

Of the seventeen cars that ran in the class with a price limit of £500 (\$2,500), a surprising number were 15-horsepower Darracqs, which seemed to be very popular vehicles. The final was won by F. Noar, on one of these French machines, which covered the mile in 1:36 3-5.

A 30-horsepower Darracq made the best time (1:34) in the class for cars selling for not more than £750 (\$3,750), and carrying four passengers and a 20-horsepower



THERY IN RICHARD-BRASIER, AT LEFT, AND SARTORI IN F. I. A. T., AT RIGHT, STARTING IN FIRST HEAT OF YONKERS RACE.



Some exciting racing was seen in the class for cars costing up to £1,000 (\$5,000), the fastest heat being that in which a 28-horsepower Daimler beat a 24-horsepower Bollée in 1:09. As this was from a standing start, it is clear that the Daimler is capable of a speed of nearly, if not quite sixty miles an hour—not bad for a genuine touring car.

#### DOROTHY LEVITT WINS HER HEAT.

In another heat Miss Dorothy Levitt gained a victory in her 20-horsepower Napier (English) over an 18-22-horsepower Mercedes (German) in 1:30.3-5. But in the final she was just beaten at the finish by a 40-horsepower Bollée in 1:21.3-5. The Daimler was unable to run in the final owing to a broken pump.

Even greater interest was excited when the heats started in the class for cars of any price. A 65-horsepower Napier and a 70-horsepower Wolseley (both English) were disqualified on the ground that they were not *bona fide* touring cars, being, in fact, racers with light tonneau hung on the rear. The competing cars included five 60-horsepower Mercedes cars, a 60-horsepower F. I. A. T. (Italian), a 40-horsepower C. G. V. (French), a 45-horsepower Bollée (French) and many others. Great interest was shown in the heat between Miss D. Hampson's 60-horsepower Mercedes, driven by herself, and Mr. Walker's Mercedes of the same power. Owing to a broken gear, Miss Hampson was beaten by twenty yards.

In the final, L. Williamson, in a 60-horsepower Mercedes, beat Mr. Dew's 40-horsepower Bollée by about 200 yards in 1:15.

#### RACING CARS RUN IN THE DARK.

The racing cars were sent off singly, although the course was sufficiently wide to allow them to run in pairs. Evening was coming on, and in the gathering dusk the racers dared not let their machines out at full speed; hence comparatively poor times were recorded. G. Higginbotham, on a 96-horsepower Wolseley, covered the mile in 56 seconds, equal to a speed of 64.1-2 miles an hour. A. Fletcher drove his 90-horsepower Mercedes over the course in 57 seconds, while Hon. C. S. Rolls, on a 100-horsepower Mors, and Mr. Rawlinson, on a 100-horsepower British built Darracq, both attained a speed of sixty miles an hour. The final was a keen struggle between the two Wolseleys, Mr. Higginbotham winning in 0:58.3-5, or at a speed of 61.43 miles an hour.

#### ALL-DAY SPORT ON SATURDAY.

Saturday's racing was started at 9:30 A. M. to avoid having to finish the trials in the dark. Tessier, on his 41-2-horsepower Bat, was again victorious in both motorcycle classes, his times for the flying kilometer being 36.3-5 and 35.3-5 seconds, respectively, the latter being equivalent to a speed of 63 miles an hour. In all four motorcycle events, J. Crundall, on a 4-horsepower Humber, came in second.

In the classes for touring cars the competitors were despatched in a continuous stream, no heats being run, but the fastest in each class adjudged the winner. In the class for cars under £250, the 10-horsepower Speedwell and 8-horsepower Cadillac took first and second places, their speeds being equal to 36 and 35 miles an hour, respectively. In the class for cars under £500, the first three places were taken by 15-horsepower Darracqs, the speeds being 45, 43 and 42 miles an hour. A 20-horsepower Winton was fourth, with a speed of 41 miles an hour.

The next event was a competition, open only to Darracq cars, for a magnificent challenge cup presented by the Darracq company. It was run over the standing mile

in classes according to horsepower, the winners of the classes running together in a handicap for the final. Four 12-horsepower, six 15-horsepower and two 30-horsepower Darracqs competed. H. Kennedy's 12-horsepower car was first, in 1:43, with Mr. Walker's 30-horsepower car second.

Several private matches were then run off, the first being between a 12-horsepower Lanchester and a 60-horsepower Mercedes, the former having one minute start in the mile. The Mercedes was beaten by about ten yards. In another match, Mr. Instone's 28-horsepower Daimler beat a 24-horsepower De Dietrich, the latter having 10 seconds start.

Fourteen competitors started in the class for cars costing under £750. Mr. Walker's 30-horsepower Darracq was first, in 0:45.4-5, with a 20-horsepower car of the same make second, in 0:47.4-5. Ten competitors ran in heats in the class with a price limit of £1,200, and in the final, as on the previous day, Miss Levitt's 20-horsepower Napier was just beaten by the 40-horsepower Bollée in 0:40.3-5. A 19-horsepower Mors was third, in 0:44.3-5.

The class for touring cars of any price was won by L. Williamson, whose 60-horsepower Mercedes covered the kilometer in

to enabling attempts to be made to break the world's record of 103 miles an hour, held by Rigolly, with the Gobron-Brillée.

#### INVESTIGATING KISER'S RECORD.

*Special Correspondence.*

CLEVELAND, Oct. 31.—The racing board of the American Automobile Association has been making an investigation to ascertain if the mile Earl Kiser is credited with having made at Glenville, August 22, in 52.4-5 seconds, may properly be classed as official. This time was made in the last mile of the special five-mile race for eight-cylinder cars. The fact which led to the investigation is that the times for the miles are remarkably irregular. The times for the successive miles were: 1:04.4-5, 0:54.4-5, 0:56.1-5, 1:03.1-5 and 0:52.4-5.

There were four timers in this race—J. H. Collister, P. Hussey, Charles E. Weaver, of Cleveland, and Ned Broadwell, of Detroit. All of these men are experienced timers of bicycles and automobile events and their work has never been questioned. At the time there was a slight controversy over the time of this mile. One of the timers caught the fourth mile considerably faster than was announced, although all of the



HON. C. S. ROLLS, IN 100-H.P. MORS AT BLACKPOOL TRIALS, ENGLAND.

33.2-5 seconds, equal to a speed of 67 miles an hour—excellent time for a touring car. Mr. Cordingley's 60-horsepower Mercedes was second, and a 36-horsepower Spyker third.

#### ENGLISH KILOMETER RECORD BROKEN.

Finally, the racing cars made an attempt on the English kilometer record, which was held by the Hon. C. S. Rolls, whose 100-horsepower Mors had reached a speed of 83.7 miles an hour at Welbeck early in 1903. Each car made three attempts, and in nearly every case the first attempt proved fastest. The following were the speeds attained:

Driver.	H.P.	Car.	Miles per hour.		
			I.	II.	III.
Clifford Earp .....	80	Napier .....	84.68	82.80	80.4
A. Fletcher .....	90	Mercedes .....	79.27	69.3	.....
A. Callan .....	96	Wolseley .....	67.7	63.5	.....
G. Higginbotham .....	96	Wolseley .....	77	.....	.....
Hon. C. S. Rolls .....	100	Mors .....	46.5	54.2	84.3
A. Rawlinson .....	100	Darracq .....	82.49	80.4	82.8

It will be seen that both Mr. Earp and Mr. Rolls broke the English record.

At the time of writing, the Blackpool Corporation considers the meet has been so successful that in a few weeks it intends to hold a special racing car meet, with a view

timers agreed on the time for five miles. If a mistake was made on the fourth mile, this, of course, would destroy the record, but as three of the timers agreed, there was no hesitation about announcing the time. Neither the referee nor the starter was in the stand when the timing was done.

#### "DENNIS McGRATH, AUTOCRAT."

Edward Porter is the author of a small book under the title "Dennis McGrath, Autocrat, and Other Horseless Tales Hanging Thereby." Evidently he is not an Irishman, for the spontaneous humor that one is led by the title to expect does not scintillate in the small volume, which is published by Herbert B. Turner & Co., of Boston. The narrative, if such it may by grace be called, seems, after a perusal of the first half-dozen chapters, to be written around several automobiles for the purpose of attracting purchasers, as it is pointless and minus a plot, and displays a lack of familiarity with automobiles. However, since the author in the "foreword" quotes as follows: "The best thing to kill the blue-devils and to brace a fellow up is a little business-like idiocy," the reader ought, perhaps, to take the hodge-podge at the author's own valuation and seek only the most superficial amusement in the volume, or suspend judgment altogether.

## "XPDNC" Wins the Hudson River Race.

Maintains an Average Rate of Speed of 22.86 Knots—"Vingt-et-Un II" is Handicapped by Motor Troubles.

THE long-distance race of auto-boats from New York to Poughkeepsie and return, on Saturday, October 29 last, proved a success, as two out of the three starters covered the course in good condition and at high speed, the winner, *XPDNC*, showing an average of 22.86 knots for a continuous run of 118.60 nautical miles.

The first proposal for a private match between *Challenger* and *XPDNC* was amended to a sweepstakes of \$500 a side, with the expectation that several other auto-boats, in particular the new *Onontio*, would enter; the only one to do so, however, was *Vingt-et-Un II*, steered by her designer, C. H. Crane.

The course was from off the Columbia Yacht Club station, West Eighty-sixth street, New York, around a tugboat anchored 1,500 feet below the railway bridge at Poughkeepsie, a distance of 68.30 statute miles, or a total of 136.60. The starting arrangements were in the hands of President W. H. Ketcham, of the American Power Boat Association and the Columbia Yacht Club, while the boats were measured



FRANK CROKER IN BOATING COSTUME.

by J. H. McIntosh, of the same club. The entries were as follows:

	Helmsman.	Rating.
<i>Challenger</i> .....	A. D. Proctor Smith.	88.35
<i>XPDNC</i> .....	Frank Croker.....	79.70
<i>Vingt-et-Un II</i> .	Clinton H. Crane....	79.35

The morning was clear and sunny—warm for the end of October—and with a very light southerly breeze. The start was set for 10 a.m., about an hour before high water at Eighty-sixth street; the tide turning at Poughkeepsie nearly four hours later. The river was smooth and the conditions all that could be asked. The *Challenger* was at the club float a little after 9 o'clock, and everything was in readiness for the start before the appointed hour, a number of yachtsmen, including Commodore H. B. Moore, Atlantic Yacht Club; H. J. Gielow, F. B. Herreshoff, C. L. Seabury, Messrs. Mabley and Bunting and Mr. Curtis, the inventor of the Curtis turbine, being present.

All eyes were turned up the river in a tedious wait for *XPDNC* and *Vingt-et-Un II*, they being reported by telephone as having started at the same time from Smith & Mabley's launch works, at Astoria. It was not until 11:15 a.m. that *Vingt-et-Un II* arrived, reporting that the other was apparently ready, when she started. After the patience of the officials and spectators was pretty well exhausted the Croker launch was sighted up the river, and at about five minutes before noon she swung into the float. The other two were ready, and Mr. Ketcham asked Mr. Croker whether he would be ready to start at 12:05 o'clock, receiving an affirmative reply.

The preparatory gun was fired promptly at noon, and all hands started to get under way. In the effort to turn the motor, the starting bar of *Vingt-et-Un II* was broken, and one of her crew made a mis-step into

the electrical wiring, breaking all the connections. A spare starting bar was secured, but it was necessary to make all the connections anew, with no time for perfect adjustment.

Mr. Croker, who was accompanied by a mechanic and a friend, spent a few minutes in the final preparations, the motor was cranked, starting promptly, and as the gun was fired the launch was pushed off from the float, the clutch thrown in, and she crossed the line with but 20 seconds' loss, picking up speed very fast. The *Challenger* was less fortunate, being slow in starting her motor and losing some time when out in the stream, finally crossing two minutes astern of *XPDNC*; she soon attained a racing speed, and when she was lost to sight she seemed to be holding her own with the leader. A full quarter of an hour later *Vingt-et-Un II* started with 11 minutes 25 seconds handicap.

The Croker launch was fitted with tank capacity for the full run, but it was a question whether *Challenger* could cover the first half of the course without a stop, while *Vingt-et-Un II* could carry only enough gasoline to run to Highland Falls, where a supply boat was stationed in advance. On *Challenger* two tanks are used, the gasoline being under pressure, and it is possible to run four cylinders from one tank, while the other tank, supplying the remaining four cylinders, is being filled.

The boats ran well, making good time, though it was impossible to judge of the relative gains and losses as they passed the intermediate points. Off Haverstraw, *Challenger* struck a floating log and damaged her propeller, so that she was compelled to withdraw. The stop for gasoline delayed *Vingt-et-Un II*, so that no fair comparison of her speed with that of *XPDNC* is possible.



C. H. CRANE, DESIGNER OF VINGT-ET-UN II.



A. PROCTOR SMITH ENJOYS A JOKE.



The turn was made by *XPDNC* at 2:35:50, her elapsed time being 2:30:50 for the distance of 68.30 miles, or an average speed of 27.17 statute miles. The *Vingt-et-Un II* rounded at 3:24:30, or 48 minutes 40 seconds after *XPDNC*, her elapsed time being 3:19:30 and her speed average 20:54 miles.

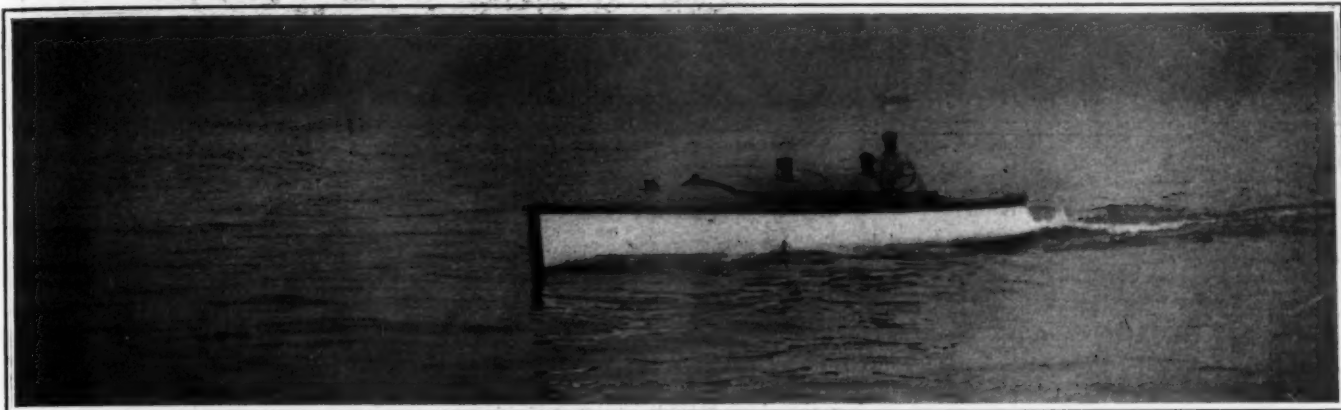
On the run down they had the tide with them and a light southerly wind against

### Auto Boats in War.

In referring to S. F. Edge's offer to loan the British government his auto boats for naval experiments, United States Consul Halstead, Birmingham, England, quotes from published statements of Mr. Edge claiming several points of utility for auto-boats in naval warfare, and of Fred T. Jane, an author on naval matters, who takes the

rapid return made without giving the enemy a chance of retaliation. A motor boat, moreover, is practically immune from attack by a torpedo."

The counter arguments put forth by Mr. Jane are that gasoline is too dangerous for use on shipboard, and that motor boats are of too limited a radius to be able to operate without a convenient base of supplies; that the high speed gasoline motor will not stand



VIEW OF THE SMITH & MABLEY AUTO BOAT "VINGT-ET-UN II" GOING AT HIGH SPEED, FROM OFF THE PORT BOW.

them; the elapsed time was a little longer, but *Vingt-et-Un II* made a far better showing. The finish was timed at 5:16:50 for *XPDNC*, her elapsed time for the leg being 2:41, or an average of 25.45 miles; while *Vingt-et-Un II* was timed at 6:16, her elapsed time being 2:50:30 and her average speed 24.04 miles. The total elapsed time of *XPDNC* was 5:11:50, an average of 26.29 statute miles, and of *Vingt-et-Un II*

negative side of the question. Mr. Edge argues that the speed his boats are able to sustain—which he places at 25 miles an hour—renders them practically safe from being hit by projectiles from war vessels; that the steersman of a boat would have time, after seeing the smoke of a gun, to stop his boat or alter its course before the arrival of the shot, and so dodge disaster—though the possibility of dodging into the

the hard service and rough and ready handling and repairing it would receive on shipboard; that carbureters cannot be made to work satisfactorily in a seaway; that the huge bow wave or cloud of spray would be exceedingly easy of detection, even at night; that the auto-boat has not yet shown sufficient all-round advantage over steam launches; and finally, that the proposal to raise a corps of motor boat volunteers for



NEW HERRESHOFF AUTO BOAT "XPDNC" BUILT FOR FRANK CROKER, WINNER OF RACE TO POUGHKEEPSIE AND RETURN.

6:10, an average of 22.15 statute miles. The delay at the start, the derangement of the wiring, which could not be perfectly repaired, and the stops for gasoline combine to make a very poor showing for *Vingt-et-Un II*, and a fair comparison of the two boats is hardly possible under the circumstances. *XPDNC* ran very smoothly, with no marked alteration of trim at speed, and she promises to be one of the fast boats of next season.

jaws of death does not seem to have been considered. Mr. Edge claims that the boats when in motion are almost invisible, as they lie in the hollows of the waves or are out of sight in their own tracks, and can spy upon the enemy unseen by him. He considers the motor boat the only means available for attacking submarines. "Behind a motor boat a torpedo can be trailed," Mr. Edge is reported as saying. "The submarine outside a port sighted and exploded and a

coast defense, using torpedoes, is nothing short of ridiculous, because torpedoes are only of use in the hands of skilled regulars.

"I tell you," said the man who owns two automobiles, "that the horse must go."

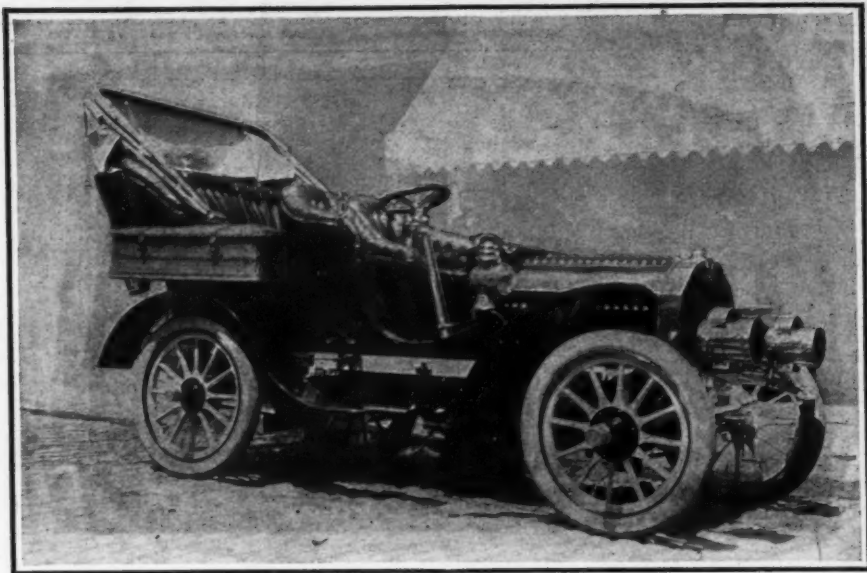
"Yes," replied the old-fashioned fellow, who had just stepped out of his station wagon, "I see one went for \$70,000 at an auction sale in New York the other day." —*Chicago Record-Herald*.

## Onontio's Fast Mile.

The first public trial of the new auto-boat *Onontio*, owned by Commodore H. B. Moore, Atlantic Yacht Club, and described last week in *THE AUTOMOBILE*, was made on Saturday on the occasion of the New York-Poughkeepsie race. It was expected that the *Onontio* would start, but she did not do so; however, she came up the Hudson about 11 o'clock and ran by the Columbia Yacht Club later on, spurring with the racing boats as they passed up. She then came in to the club float and took on board Commodore Moore and Mr. Gielow, her designer; James Craig, Jr., the designer of the motor, being already on board. She then ran up the river and made a trial over the measured mile, beginning off Eighty-ninth street, with a very light wind and against the tide and carrying a party of passengers. She made the mile in 2 minutes 26 seconds, or at a speed of 24.65 knots. Her performance was most satisfactory, as she held her trim and left the water very cleanly.

## The Cape Cart Hood.

Many merits combine to make the Cape cart hood the popular cover for automobiles that it has become this season. In the East, where thousands of large touring cars are owned this style of hood has come into such extensive use as to rival the canopy top, and some of the finest and most expensive touring cars have been fitted with them. In one of the accompanying reproductions from photographs is shown a large Napier car owned in New York and so equipped, the hood being raised and strapped at the front to the dash, though more commonly the straps are attached farther forward on the car. This is an unusually large hood, having five bows instead of the customary three. Such a hood, made of water-proofed khaki colored duck, is very light and convenient to attach and detach, affords ample protection from the sun and, with side curtains buttoned into place, keeps the inside of the car with its occupants perfectly dry in bad weather. The smaller engraving shows a Pierce Arrow car fitted with a Cape cart hood folded back for fair



PIERCE CAR WITH CAPE CART HOOD FOLDED BACK FOR FAIR WEATHER.

weather driving. In this position the hood serves admirably as a dust protector, preventing the dust raised by the car from curling up over the back of the tonneau seats and settling on the necks, hair and clothing of the passengers. It is not necessary to raise the hood when entering or leaving the tonneau by the rear door, as the head can be inclined sufficiently to clear the cloth and bows.

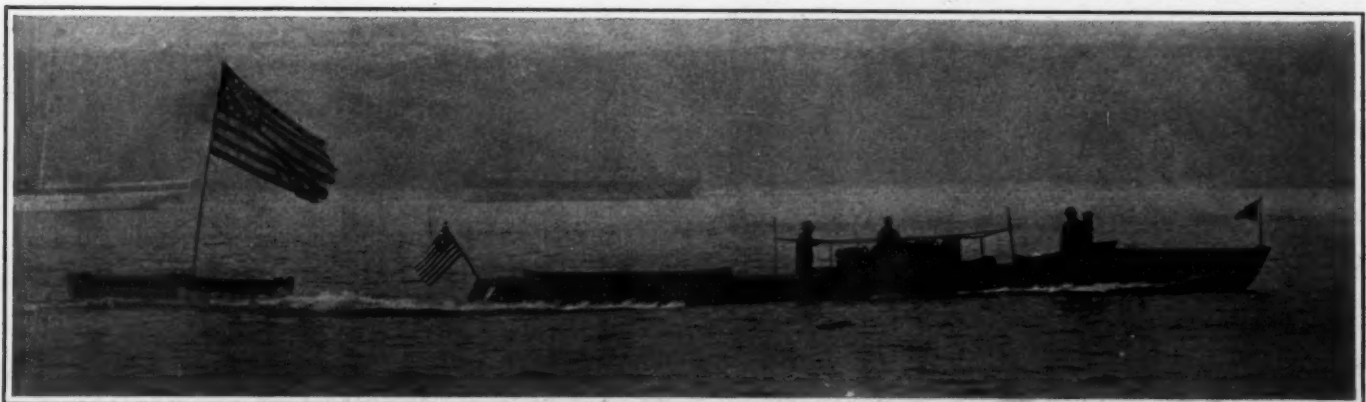
## Berlin International Show.

An international automobile exposition will be held in Berlin February 4 to 19, under the presidency of the Duke of Ratibor and the joint control and management of the German Automobile Club of Berlin and the Association of German Motor Vehicle Manufacturers at Cannstatt. These two organizations, writes Consul General Frank H. Mason to the Department of Commerce and Labor at Washington, comprise and represent, respectively, the varied interests of Germany in the use and manufacture of motor vehicles for purposes of sport, travel, and transportation.

The exhibition will be held in what is

known as the "Landes Ausstellung Park," near the Lehrte railway station, which incloses the large group of one-story buildings in which the annual art exposition, the "Salon" of Berlin, is held each year from May to October. Hitherto all automobile exhibitions in Berlin have suffered more or less from not only the want of adequate room under roof for the exhibits and the throngs which they brought together, but from a lack of conveniently adjacent space in which the various machines could be shown and tested in operation. So far as the first of these conditions may be concerned, the event of next February will certainly leave little or nothing to be desired. The floor space under roof is 12,000 square meters (129,168 square feet) in extent, all on the same level, with all the principal rooms lighted from above and so spacious as to fulfill every requirement in that respect. The exhibition will be divided into five general departments or sections, namely:

- (1.) Motor vehicles for the transportation of persons, also for sanitary, fire department, and military service.
- (2.) Motor wagons for transporting freight.
- (3.) Motor bicycles.



H. B. MOORE'S NEW AUTO-BOAT "ONONTIO" RUNNING A MILE IN 2:26, OR AT RATE OF 24.65 NAUTICAL MILES AN HOUR.



(4.) Motor boats, in so far as the size and conditions of the exhibition space may be adequate and adaptable to such exhibits.

(5.) Parts, belongings, and materials for motor vehicles, and tools, fixtures, clothing, drawings, maps, and literature pertaining to the use of automobiles for sport, travel and transportation.

The rent of floor space will be at the rate of 30 marks (\$7.14), and for wall space 25 marks (\$5.95) per square meter (10.764 square feet). Outside the buildings space will be charged for at the rate of 10 marks (\$2.38) per square meter (10.764 square feet). The first allotment of space will be made to exhibitors who shall have filed their applications by the end of October, so that there is every inducement in favor of immediate application by all who may intend to exhibit. Any exhibit or part thereof may be sold during the exposition, but can be removed for delivery only after the close of the display. All the details of insurance, protection to exhibits, and the rights and privileges of exhibitors are arranged on the liberal scale and with the intelligent spirit which characterizes the management of a first-class, up-to-date exhibition. Applications for space and all further information should be addressed to the managing director, Freiherr von Brandenstein, No. 4 a Sommer-Strasse, Berlin, N. W.

Here will be presented an opportunity for American manufacturers to bring their work easily and effectively before the German public; for automobilism, which began here after it had become established and popular in France, England, and the United States, has now reached a stage which makes Germany a ready market for many different

types of machines. While the fame of the Mercedes and other German-made racing and touring vehicles is world-wide, there is a distinct impression here that in respect to electric carriages for city use and the smaller vehicles of moderate price for business and recreation, American makers are still quite in advance. Some of the leading types of American-made "runabouts" are already sold here and are highly appreciated.

An international motor-vehicle exposition at Berlin always attracts a throng of interested visitors from Austria, Russia, and other neighboring countries. The exhibition of next February will be far more extensive, complete, and therefore important, than either of its predecessors, and the opportunity which it will present to manufacturers will be correspondingly timely and valuable.

### Feminine Unconcern.

Bicycle Policeman Rensselaer brought a whole menagerie to Jefferson Market Police Court with him yesterday afternoon, says the *New York Sun*. There was a wild automobile and a tame bulldog—one of the old-fashioned four-poster mahogany kind—a mysterious Woman with an Ecu Mask, ditto in a Lace Hat and two quarts of diamonds, and last and not least a chauffeur. He was the only non-mysterious member of the troop. He gave his name as Harry Roberts. Rensselaer said he had arrested Roberts at Eighteenth street and Sixth avenue, going eighteen miles an hour.

While the examination was in progress Lace Hat and Ecu Mask sat in a back seat, mining for sweets in a bonbon box. At first

Ecu Mask kept the birdcage arrangement close over her face and peered about the court through a little glass window. But this interfered with candy-consumption, and the edge of the mask was raised to the bridge of her nose. Nobody could identify the nose. Magistrate Hogan asked the chauffeur who was with him.

"My missus," he replied.

"What is her name?" was the next question. The chauffeur mumbled a syllable that sounded like "Burns." John Foley raised his voice seven feet in the air and shouted:

"Mrs. Burns." Ecu Mask glanced around doubtfully, consulted Lace Hat, took another bonbon out of the box, and then rose.

"What is that woman waiting for?" asked Foley, scornfully.

Then she came forward. The mahogany pup followed her gravely down to the gate, where a grim copper shut him out. The woman mounted the bridge and looked at the Magistrate sweetly under the lace edges of her bird cage.

"Do you wish to say anything, madam?" queried Magistrate Hogan, after a long silence.

"Why, yes! What shall I say?" came out of the bird cage.

"I'm sure I can't tell you," was the only help she got.

"Oh!" with a little start. "Why, of course. Our automobile can't go more than five miles an hour on a slippery pavement."

"The pavement was dry as a bone," remarked the bike cop, in a still dryer tone.

"I am sorry to be obliged to differ with you," said the woman.

"One hundred dollars bail for trial," concluded the Magistrate. Then Ecu Mask lifted her hand, which had an equal number of fingers and rings, and asked if they wouldn't please take money.

"I have \$300," she said.

"No, madam," volunteered John Foley. "You must get a man that owns property."

"Oh," she remarked again, and looked relieved. Then the two women went outside and began to fuss around the automobile. An admiring assembly of a hundred people blocked the sidewalk. After a little coaxing the wild automobile consented to go. It rolled off with the tame mahogany pup, the diamonds, Lace Hat, Ecu Mask and the bonbon box, out of the cheering crowd. Later the whole outfit came back with a man and a deed to real estate. The chauffeur was bailed out by Charles Spotswood, proprietor of the Hotel Lemartine, 12 East Thirty-first street.

An automobile passed through our town Tuesday. It was quite a curiosity for the children, and some of the older folks too. —*Maryville (Tenn.) Record*.

We forgot in our last issue to say one of those automodevils passed through here. It was a fine one, but when she struck Knowlton's plastering sand she stopped all right.—*Berlin (Wis.) Courant*.



NAPIER CAR WITH CAPE CART HOOD RAISED FOR HOT WEATHER USE.

## Packard, Model N, 1905 Touring Car.

THE new Packard touring car for 1905, designated as Model N, illustrated herewith, is about ready for delivery, after a series of tests through the mountains of Pennsylvania and the sandy roads of southern Michigan. The motor of this machine is rated at 22-28-horsepower.

The frame is of pressed steel of the usual channel section, and the cross members are also of channel steel, with the open sides downward. The side members are 41-2 inches high in the middle, where the duty is heaviest, and 13-4 inches wide, tapering toward each end. Near the front the frames are bent inward to reduce the width of the frame where the motor is hung. The frames are strengthened where they are bent by being increased in width. All

and 10 spokes in the front wheels. Detachable tires 4 inches in diameter are on all wheels. The front wheels run on adjustable roller bearings, and the live rear axle, which is driven by bevel gears, runs in double ball bearings, and is provided with radius rods similar to those used on the front axle.

The spring system is of the type regularly used in the Packard cars. The two semi-elliptic springs in the rear are 49 1-4 inches long and 2 inches wide, attached to forged steel brackets on the main frames, while the front of the body is supported on a single transverse spring shackled at each end to the steering knuckles and carrying the front end of the car on its centre. The weight is thus supported close to the wheels

seats. The cam shaft, cams, rollers and lift rods are hardened and ground. The guides for the valve stems and for the lift rods are of bronze, and particularly long, to give a good bearing surface. The cam rollers are mounted on the ends of forged steel arms which extend to the opposite side of the crank case, where they are pivoted. The object of this arrangement is to retain the alignment of the cam-lifting rods.

Each piston has four rings, all of which are at the upper end. The diameter of the piston is reduced at the centre so that at this point there is no bearing on the cylinder walls, this being done to reduce friction. The forged steel connecting rods have adjustable bronze bearings at each end.

An oil pump operated by a shaft, gear-driven from the same shaft that drives the ignition current distributor, forces oil to the various frictional points of the motor, a



NEW 1905 MODEL N PACKARD 22-28 HORSEPOWER TOURING CAR, WITH SIDE ENTRANCE TO THE REAR SEAT.

riveted joints are reinforced with forged steel plates, those at the corners being forged in one piece with the spring hangers. There is no auxiliary frame for the motor, which is hung from six forged steel brackets, three on a side, riveted to the narrowed portion of the main frame.

The front axle is of welded steel tubing 2 inches in diameter and 1-4 inch thickness of wall, with the steering knuckle stubs brazed into the ends. The steering pivots are long and turn in ball bearings. The joints between the pivot arms and the connecting rods are ball and socket joints, and spring cushions are provided. The axle is kept in its place at right angles to the frame by two adjustable radius rods secured to the frame.

Wheels are of wood, 34 inches in diameter, having 12 spokes in the rear wheels

and twisting strains on the frame are minimized. The motor is rated at 22-28-horsepower at 900 revolutions a minute, and has four vertical cylinders cast in pairs with the water jackets and valve housings cast integral, the water jackets extending around the valve housings. The aluminum crank case is cast in two parts, one of which may be removed for making examinations and adjustments. Six arms cast on the crank case are secured to the six brackets already referred to on the main frames.

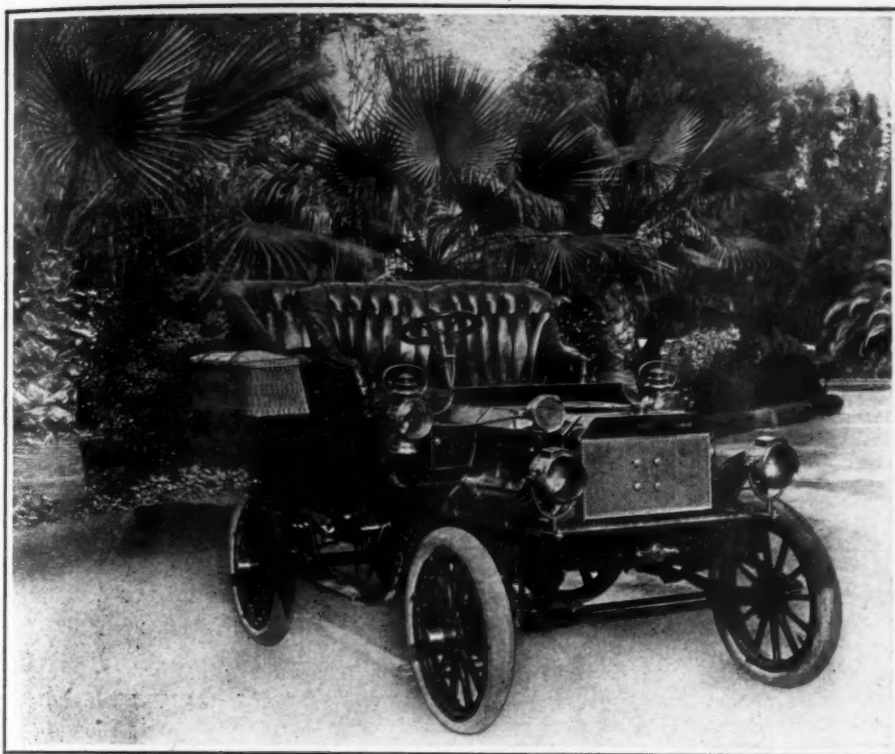
All the valves are mechanically operated from a single cam shaft which runs along the left side of the motor inside the crank case, where it runs in oil, carried in three bronze bearings. The inlet and exhaust valves are exactly alike and are interchangeable, forged from nickel steel, and have heads of substantial thickness and broad

sight glass on the dash serving to indicate the rate of feed. The cooling system heretofore used in the Packard cars is retained unchanged.

The power transmitting mechanism has been found by the Packard Company so satisfactory during the past year that no change has been made in applying it to the new car. The drive is by bevel gears and propeller shaft, and the transmission and differential are mounted on the axle, of which they form an integral part. The rear axle has double ball bearings, and ball thrust bearings are provided wherever necessary in the driving gear. Two levers on the right hand side of the car operate the three forward speeds, and reverse, and a third is used to apply the emergency brake. The clutch is conical.

The ignition is by jump spark, a double





"TOURIST" CAR BUILT IN LOS ANGELES ESPECIALLY FOR CALIFORNIA ROAD CONDITIONS.

set of batteries and quadruple coil, the latter placed on the dash board, being used.

The distributor is located at the top of a vertical shaft driven from the cam shaft, and is self-contained. The distributor casing is of aluminum with fibre lining. The four brass contact bars are imbedded in the fibre and electrical connection is formed by an arm which extends from the end of the distributor driving shaft, and carries at its extremity a roller which bears against the inner surface of the fibre lining, making contact as it passes over the brass bars. The spark plugs screw into caps which close the openings over the valve chambers.

The carbureter is of the float feed type, and the mixing chamber, which is dome-shaped, is jacketed with hot water from the cooling system to provide, as nearly as possible, a uniform vaporizing temperature. The air inlet is also hot water jacketed in order to warm and dry the entering air. A regulating valve is placed in the air inlet pipe. There is also an auxiliary air inlet, acting automatically, to allow the ingress of a sufficient quantity of air to meet the demands of the motor when the speed is increased. A throttle is operated by a lever on the top of the steering wheel, and the same throttle is in connection with a centrifugal governor. The accelerator throws the governor out of engagement with the throttle and permits the latter to be opened to its widest limit.

The braking arrangements are calculated to leave as narrow a margin as possible for accidents. There are no brakes on the gearing or shafts; but on each rear hub is a drum upon which all braking is done. The ordinary brakes, applied by a pedal, are of

the band type, working on the outer surfaces of the drums, while the emergency brakes consist of lever-operated expanding rings inside the drums. All braking is thus done close to the point of resistance.

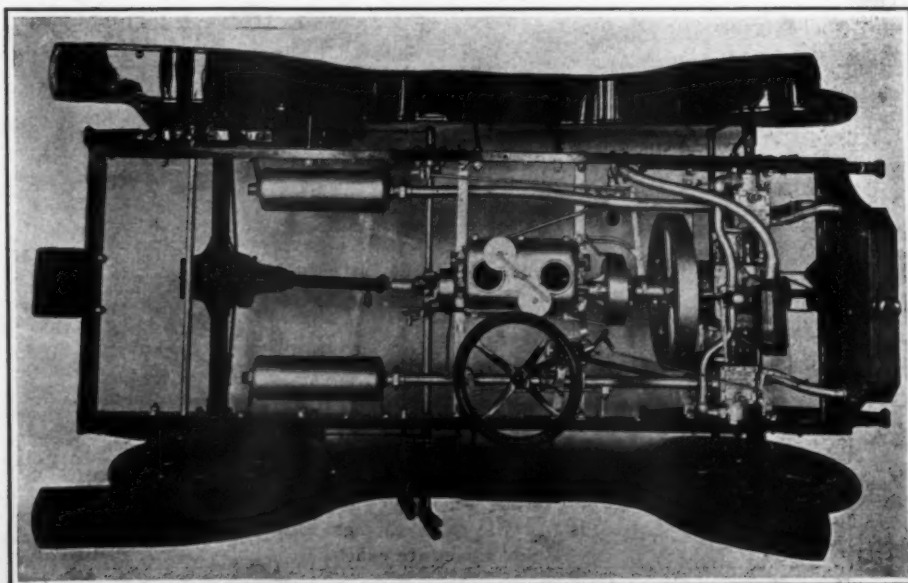
The body of the new Packard has side entrances, and the rear seat is very spacious, there being ample room on it for three passengers. The front seats are individual and both front and rear seats have high backs. The mud guards are large and, with the running boards, form a continuous guard. The body is finished in Richelieu blue and the running gear in cream, the same as the 1904 Packard standard finish. The car is completely equipped, when delivered, with lamps, horn and tools.

## California Tourist Cars.

Automobiling has taken an exceedingly strong hold on the people of the sunny State of California, and the opportunity for a manufacturer to put out a good car has not been overlooked. The Auto Vehicle Company, 943 Main street, Los Angeles, is building an automobile especially adapted to the road conditions to be found in California, one of which is the frequent occurrence of heavy grades. The car, which is made in two models, is called the Tourist. The touring model has a double opposed motor of 15-horsepower located under the bonnet, the shaft extending lengthwise of the vehicle, and driving by propeller shaft and bevel gears to the rear axle. The change speed gear is of the sliding type, gives three forward speeds and reverse, and is located under the footboard. Each cylinder exhausts into a separate muffler placed well toward the rear of the frame. A combined cellular radiator and tank occupies the usual position, and radiation is assisted by a fan. The mud guards form, with the steps, continuous fenders on both sides.

The Tourist runabout also has a double opposed motor located in front, rated at 12-horsepower and driving to the rear axle through a planetary change speed gear and chain. This machine weighs about 1,400 pounds. It is similar in most respects to the 1903 runabout built by this concern, which, however, had a motor of only 8-horsepower. The increased power is considered very desirable in order to give the car ample hill-climbing ability.

The touring car will carry five passengers and is rated to do thirty miles an hour on a good level road. It is sold equipped with horn and lamps, and all ready to put on the road. The factory, we are informed, has a capacity of ten cars a month, and it is expected that the total product for this year will be more than 100 complete automobiles.



CHASSIS OF "TOURIST" CAR, WITH TRANSVERSE OPPOSED 15-HORSEPOWER MOTOR IN FRONT

### Michigan Light Touring Car.

This is built to meet the demand for a four-passenger car of a fairly long wheel-base and reasonable power, at the lowest practicable cost. It has a two-cylinder horizontal engine of the opposed type, with cylinders 4.5-8 inches bore by 5 inches stroke. The heads are cast integrally, and both inlet and exhaust valves, which are of good size and located underneath, are mechanically operated, the exhaust valves by a single cam and the inlet valves by two separate and smaller cams, one on each side. The connecting rods are Whiteley steel castings. Jump-spark ignition is used, and the engine is lubricated by splash, fed by a pressure oiler, with pipes leading to each cylinder and each main bearing, each pipe

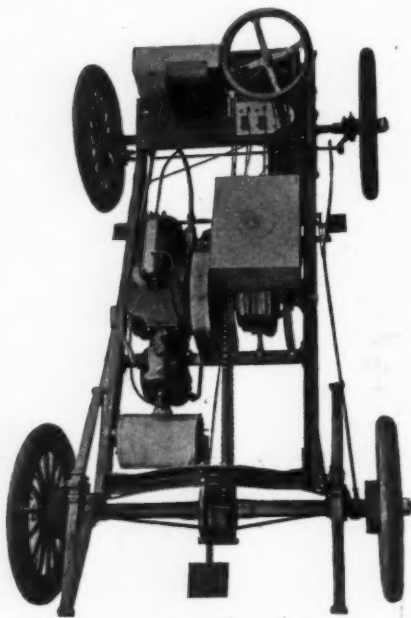


FIG. 2.—CHASSIS OF MICHIGAN CAR.

having its own sight feed. The engine is rated 12 horsepower at 1,000 revolutions per minute.

The speed-changing gear is of the planetary type, and is carried on a shaft separate



FIG. 1.—MICHIGAN TONNEAU TOURING CAR—TO CARRY FOUR PASSENGERS.

from the engine shaft, being bolted thereto by a flange coupling. The engine is supported on two cross-irons in the angle-iron frame, and the outer end of the planetary gear runs in another bearing attached to the right-side member of the frame. The details of the planetary gear are shown in Fig. 3. Only spur gears are used, there being no internal gears. A disk clutch gives the direct drive for the high speed.

Control is by a lever just outside the body, which gives the high speed in its forward and the low speed in its back position. The reverse is operated by a pedal. Other pedals apply the service and emergency brakes. Consequently, if the operator gets confused he cannot put his foot on any pedal that will not stop the car. It is, of course, necessary to move the speed-changing lever to neutral position.

The rear axle is made of crucible axle steel by the Crucible Steel Co. of America, and it is 1 1/4 inches in diameter. The Warner differential gear is surrounded by a malleable iron casing connecting the two fixed axle tubes in which the 1 1/4-inch shaft runs in four Hyatt roller-bearings. These tubes are of Shelby tubing. The wheelbase is 78

inches, and the springs are 32 and 36 inches long in front and rear, respectively, both being full elliptic. Radius rods preserve the rear axle alignment, and emergency-brake drums are fitted to the rear wheel hubs. Steering is by pinion and gear segment and

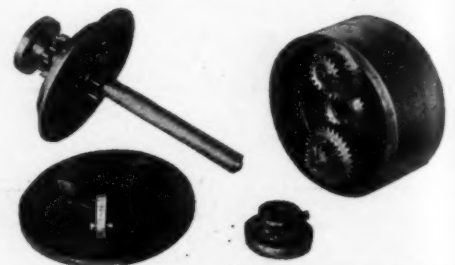
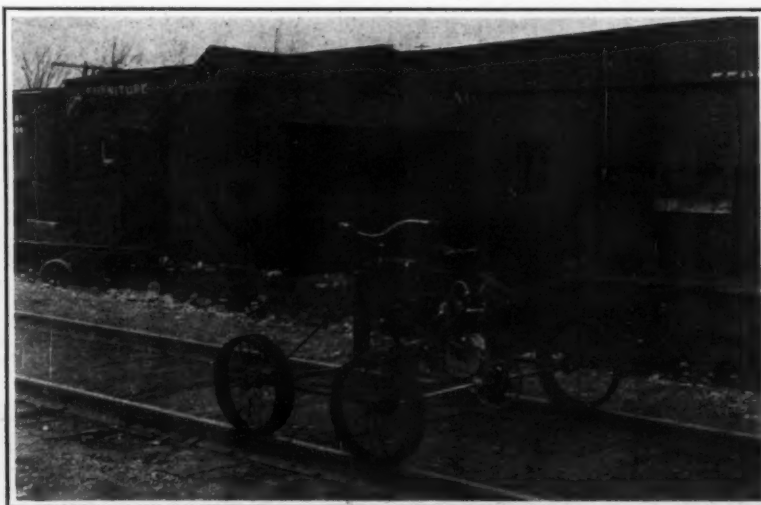


FIG. 3.—PLANETARY GEAR OF MICHIGAN CAR.

tilting wheel. The weight is stated to be 1,400 pounds, and the length 9 feet 4 inches over all. The car is built by the Michigan Automobile Co., of Kalamazoo.

### Railway Inspection Car.

The accompanying illustration shows a railway inspection car fitted by the Merkel Manufacturing Co., Milwaukee, Wis., with one of its regular bicycle motors of 2 1/4 horsepower to show what the motor would do under the circumstances. A pedal driven railway cycle, made by the Kalamazoo Railway Supply Co., Kalamazoo, Mich., was fitted with a motor driving the rear wheels through a spur gearing. Starting is effected in the same manner as with a road motor-cycle, by pedalling. The machine has worked well, the maximum speed obtained being about 30 miles an hour, while it may be reduced to about four. A band brake on the large gear on the rear axle will stop the car, when running at full speed, in about 15 feet. It is thought that the machine will be useful as a railway inspection car, or for any light service to which railway velocipedes are put.



RAILROAD INSPECTION QUADRICYCLE FITTED WITH MERKEL MOTOR



## New Speed Indicator.

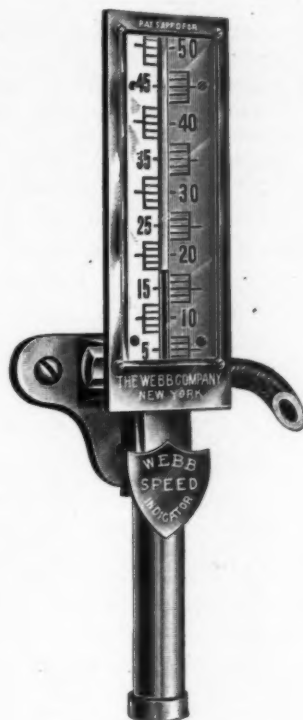
The ever increasing need for some means whereby the speed of an automobile may be ascertained by the occupants at any moment has had the effect of bringing out a number of speed indicators operated in various ways, the latest being the invention of Hartwell W. Webb, secretary and treasurer of the Webb Company, 417 Park Row Building, New York city. The Webb speed indicator depends for its action upon the lifting force of a column of air, set in motion by a small pump taking its motion from one of the road wheels of the automobile, which raises a small piston carrying on a rod an indicating head which moves up and down in a glass tube marked with a scale of miles.

The little pump is exactly similar in construction and action to the gear pumps used for circulating cooling water, and is driven by a gear secured to the hub of one of the front wheels. A feature of this gear is that it can be trued up after it has been attached. One of the pump gears is hollow, containing sufficient lubricating oil for a thousand miles. The pump body and gears are of bronze, the large driving gear of bronze and the pinion of steel. A special rubber tube covered with a protecting cover of varnished whipcord conducts the air from the indicator to the pump. The tubing may be cut to any requisite length.

The recording instrument, which is illustrated herewith, is attached to the dash. The lower part of the instrument consists of a brass tube, communicating at its lower end with the atmosphere, and at its upper end with the tube leading to the little air pump. The bore of the tube is tapering, the smallest diameter being at the bottom. An aluminum piston, from the upper side of which a rod extends upward into a glass

As the piston rises in the increasingly large bore of the tube, the amount of air that passes it increases until a point of equilibrium is reached, when, if the speed of the vehicle is constant, the piston and its index remain stationary.

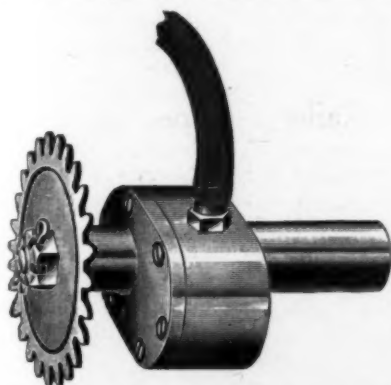
It is stated by the manufacturers that the indicating head of such diameter in moved from the correct position by any



WEBB SPEED INDICATOR.

jolting or jarring of the car, but is "dead beat," this feature being secured by making the indicating head of such diameter in proportion to the diameter of the glass tube in which it rises and falls that its action is like that of the plunger of a dashpot in preventing sudden fluctuations. The instrument may be read, it is stated, at a distance of 20 feet, and from the tonneau seats with ease, if it is within the range of vision. A tilting mounting allows the indicator to be set at the most convenient angle to the eye of the operator. A heavy bevel glass plate covers the glass tube in which the indicating head moves and the indicating head is of a vivid red color. The body of the instrument is of brass, substantial in construction and ornamental yet unobtrusive in design.

When a doctor was haled before Judge Weand at the fall term at Norristown, Pa., recently charged with exceeding the legal speed limit, and his counsel explained that it was absolutely necessary on that occasion that his client make the highest rate of speed of which his machine was capable, as it was a case of life or death, the judge said: "In that case, it will make a very material difference in my sentence. Had the doctor been on pleasure bent I should have considered the advisability of inflicting the full penalty"—\$100 fine or thirty days in jail.



SPEEDMETER SPUR WHEEL AND PUMP.

tube above and in line with the lower tube, is free to move in the tapered bore, the smaller end of which it fits closely.

When the automobile moves the air pump rotates and draws a current of air up through the tapered tube. At a speed of two miles an hour the vacuum produced on the upper side of the little aluminum piston is sufficient to raise it and its index to the two-mile mark on the scale. The piston and rod weigh together 5 1-2 grains.

## BOSTON AUTOMOBILE COURSE.

### Y. M. C. A. School to Begin Second Winter's Instruction on November 8.

*Special Correspondence.*

BOSTON, Oct. 31.—The second winter course in the Boston Y. M. C. A. automobile school will begin on election night, November 8. Admission will be free that night. The programme that has been laid out provides for a general discussion of the automobile, past, present and future. Parker H. Kemble, who was in charge of the steam section last year, is superintendent of the course. He will describe the objects of the school in a general way. Dr. Walter G. Chase, who has just made a tour around the world, will speak on "The Motor Car in the Fiji Islands, and other out-of-the way Places." A. C. Fletcher, secretary of the Massachusetts Highway Commission, will be another speaker. His subject will be "Observement of the Speed Regulations, and the Registration of Cars." Other speakers will be Elliot C. Lee, president of the Massachusetts Automobile Club, and Colonel James F. Soutter, ex-president of the club and chairman of the advisory board of the school.

The governing board of the automobile school is the same as last year. Colonel Soutter is chairman, and the other members are George H. Lowe, New England manager of the White Sewing Machine Company; A. F. Neale, of the Studebaker Company; Isaac H. Davis, of the Crest Manufacturing Company, and J. S. Hathaway, secretary. Since last year this board has been busy making its plans for perfecting the course, and has proposed a considerable number of new details, which will make the instruction more valuable for all classes of persons interested in automobiles.

There will be courses of lectures on steam, gasoline and electric vehicles, and shop-work courses corresponding to the lectures. There will also be a drafting course. More attention will be given this year to the practical operation of cars, and road lessons will form an important feature of the school. There will be regular quizzes for the students and written examinations. Students who pass the examinations will be given certificates or diplomas.

The shop work on steam vehicles will be conducted in the Park Square automobile station, and will begin on the evening of November 10, the Thursday following the lecture. It is expected that the work on the steam carriages will be completed by the end of the year, and the lectures on gasoline cars will probably be started December 27. It is planned to start the electrical course February 28.

The success of the school last year is testified to by the fact that nearly all of the competent men who were graduated last spring readily found situations, one party taking three young men from the school. The management feels much flattered by the widespread imitation of the school throughout the country. From the time of the inception of the school the managers received queries from all parts of the United States and from abroad, and as a result of the information given schools are this year to be established in many places. In New England there are to be schools on the Boston plan at Providence, Worcester, Springfield and Brocton. Similar schools have also been established in New York, San Francisco, Chicago, Detroit, Cleveland, and other places.

## Correspondence

### Two-Cycle Engine Design.

Editor THE AUTOMOBILE.

[100].—What will be the height and width of the exhaust port of a two-cycle engine of 4 by 4 at 750 revolutions? E. A. Montreal, Canada.

Make the exhaust port 3-4 inch high and about 4 inches wide, measured around the cylinder wall. Have the bottom edges of both the exhaust and inlet or "transfer" ports flush with the top of the piston when the latter is at the end of its stroke, and make the inlet port 1-2 inch high and 3 inches wide.

### Single Chain Driven Cars.

Editor THE AUTOMOBILE.

[101].—I have a friend who is building a motor car, and he asked me why there were not more single chain driven cars with the motor under the hood. Will you please tell me the objections to such an arrangement? A. E. S.

Windsor, Vt.

It is a little difficult to state in concise terms the objection to the arrangement proposed. It is an entirely practical arrangement, and is not preferred simply because the more common arrangements are more convenient or more efficient. If the motor is placed with its shaft lines across the frame of the car, there is not the usual room for the speed-changing mechanism inside of it, and this necessitates transmitting by a chain to a gear box, or planetary gear behind the motor. This results in two chains arranged tandem, which is an awkward arrangement when it becomes necessary to adjust the chains. When the car is small and light, it is possible to place the compact planetary gear outside the engine and drive from that to the rear axle through the single chain. If the chain is not too long this makes a very satisfactory arrangement. An example of it is seen in the Franklin runabout. If, on the other hand, the motor is placed with this shaft fore and aft, one is confronted with the necessity of using first the bevel pinion gear, and after that the chain, and this combination involves a greater friction loss than the bevel gears used with the customary propeller shaft. Consequently, the arrangement you propose, although very convenient for home-made machines, is not to be considered among the marketable devices.

### Rights of Autos on the Streets.

Editor THE AUTOMOBILE:

[102].—I purchased a Grout steamer about three years ago, and as it was the first one in this city, it, of course, caused some of our town horses to shy. To-day one of my old friends filed an injunction to restrain me from running and operating

the car on the streets of this city, and my attorneys asked the Judge to allow the matter to rest for a few days until they could look up the law on such matters. Inasmuch as there is very little law upon the subject, especially in this State, I write to ask if you have at hand any decisions relative to the rights of automobiles upon the streets and highways. E. J. S. Paragould, Ark.

### Amount of Compression Space.

Editor THE AUTOMOBILE.

[103].—About what should the compression space be of a 3 1-2 by 4 inch cylinder? Also the diameter and weight of fly wheels to be enclosed in the crank case? Also please tell me what the horsepower of such an engine would be. R. W. M. Toronto, Canada.

Compression space should be about 10 cubic inches if the motor is to run 1,200 to 1,500 revolutions per minute. The diameter of the fly wheels should be about 10 inches, and there is not much danger of putting too much metal into them. The inside diameter of the rim might be 6 inches, and the width as great as the crankcase will accommodate. You will, of course, cast a suitable counterbalance inside the rim opposite the cranks and crank pin. The motor should deliver about 5 horsepower at 1,500 revolutions per minute.

### Not Interested in Racing.

Editor THE AUTOMOBILE.

[104].—We hope that you will not overlook the fact that some of your readers and subscribers are not interested in automobile racing. We must say that your number of October 15 was a great disappointment to us. We hope that some later numbers will have something more of interest to the average automobile user. E. B. L. San Antonio, Tex.

Replying to your letter, we beg to assure you that we were not unaware that some of our 12,000 subscribers are not specially "interested in automobile racing," for we have been long enough in the publishing business to appreciate that it is highly improbable that 12,000 persons scattered throughout the length and breadth of America and in various foreign countries would have exactly similar tastes or interests.

While your statement is quite accurate so far as it goes, you altogether overlook the real and only grounds for question on the part of a subscriber—do we give value received for the subscription price demanded per year? Let us see. In the forty-four issues of THE AUTOMOBILE, from January 2, 1904, to October 29, 1904, inclusive, we have published 1,210 pages of editorial reading matter, not counting a single page of the advertising section. These pages contain about 1,280,000 words, and not less than 1,266 original engravings. Practically all of the reading matter is original, and the

engravings are almost without exception made by ourselves, and hundreds of them from original photographs made exclusively for us, some costing as much as \$10 apiece. Our bill for photographs in the Vanderbilt race alone, for example, was nearly \$200.

All this matter the subscriber has had for just one dollar and sixty-eight cents.

Leaving out of consideration every line and every picture about racing that we have printed during the year, we submit that the remainder is value received for \$1.68.

Did it ever occur to you that there are some persons who are interested in reading about races, and that out of 1,200 pages of reading matter we have already published this year, they are entitled to a small percentage? The interest of the automobile reading public in the Vanderbilt race is so great that although, in anticipation of that interest we published 1,000 extra copies of the issue of October 15, the edition is all sold out, and we are not only unable to fill repeat orders of the American News Company, but are unable to meet the demand for extra copies from our own subscribers.

We would like to be in a position to include in the subscription to THE AUTOMOBILE, a complete copy of the Encyclopedia Britannica, the Century Dictionary and a few other similar works, but regret that it is financially impossible.

We suggest to you the thought that if you get as good returns for all the money you expend in other directions as you do in a subscription to THE AUTOMOBILE you are certainly ahead of the game of life.

### Nails on Vanderbilt Cup Course.

Editor THE AUTOMOBILE.

[105].—I have noticed in different publications since the Vanderbilt Cup Race the theory advanced that nails and broken glass were intentionally scattered upon the course for the purpose of injuring tires. This may be entirely true, but on the other hand, I think that my experience on that day tends to show that the tire troubles which were so prevalent during the race were simply from natural results of running the event over the public roads.

I had occasion to walk from the grand stand to the Mineola crossroad—about two and a half miles. This side of the stand my attention was attracted to half of a broken horseshoe lying in the middle of the oiled surface of the road. After removing the same I made a point of walking up the road in the middle of the track, keeping a careful eye on the road for any similar objects that might be there. In the next two miles I found three half horseshoes, three bolts running from three to four inches long and from one-quarter to three-sixteenths of an inch in diameter, and five large nails, all of them of sufficient size to puncture a tire. The rusted condition of these objects showed me that they had been on the road for some time and



had apparently worked through the oiled surface to the top of the road.

If all of these could be found in two miles by one person, in a more or less unused part of the road, the average for the whole track per mile would be pretty heavy, and I think fully sufficient to account for the troubles the men had with the tires.

I am writing this to you, as I think it is only just to those people who may come under suspicion of having intentionally "salted the track."

R. A. GREENE.

New York.

The personal inspection made by our correspondent would seem to confirm the report that nails were intentionally scattered over the course, rather than the reverse. Because the nails were rusted it would not necessarily follow that the rust had been gathered in the particular spot where the nails were found. Nails will rust almost anywhere if left exposed in the open, and accumulations of old horseshoe scrap and nails are not uncommon in farmyards.

Representatives of THE AUTOMOBILE drove over the roads repeatedly in the weeks intervening between the location of the course and the holding of the race. On none of these trips was any tire trouble experienced, and careful scrutiny of the road surface at many points did not show any abnormal surface conditions.

It has been suggested that immediately before the holding of a road race an electromagnet of suitable shape be drawn over the surface of the course so that any loose nails or iron scraps would be removed. This plan, though a good one, would not prevent tire troubles caused by broken glass.

### True Navy Searchlights.

Editor THE AUTOMOBILE.

[106].—I have read the article "Headlights and Night Driving," by Joseph Tracy, in your paper, and I am a little surprised that you should publish an article containing so many evident misstatements.

Mr. Tracy has evidently done very little fast night riding and is evidently quite unfamiliar with the true Navy standard searchlight, as he refers to "so-called" searchlights.

Mr. Tracy's remarks about the dark shadows cast by the lights apply only when the lights are hung very low upon the car. With Navy type searchlights carried more than three feet above the road surface, hollows in the road that are safe to pass at high speed do not cause shadows.

No experienced driver would ever attempt high speed with any car fitted with only rigid lights, for very few roads are straight for any great distance. With a large swing light mounted upon the dash or mounted out forward and controlled by means of a convenient lever it is safer on most good roads to run at high speed by night than by day, and I have in my possession letters from many prominent motorists attesting to this.

A single nine-inch Navy type searchlight mounted high up on the dash will show a team or a bend in the road at 1,000 feet, or over, and I have often seen the reflection from the back of a carriage at fully 2,000 feet.

With a good searchlight fast riding is safer by night than by day, for several reasons. In the first place, there is much less traffic in the way, people with scary or supposed scary horses see the beam a mile or more away and get out of the road in ample time, and the motorist never is aware of their presence except, perhaps, for their dust as they pulled into some side road. Notwithstanding repeated statements to the contrary by excited drivers, the powerful light from the searchlight positively quiets horses that would run away at the sight of the car in the daytime. Horses are not frightened by the sound or smell of an automobile, but only by its appearance, and there never was a runaway when the searchlight was kept full in the horses' eyes until the car came alongside of him.

This effect of a powerful light is well shown by the fact that cats, rabbits and foxes will squat down in the road, and if the car is going very fast they are often run over.

I do not know who made the "so-called" searchlights that Mr. Tracy refers to. The Rushmore searchlight is exactly the same in every detail and proportion as the U. S. Navy searchlight, the only difference being that at the focal point of the mirror there is placed an acetylene flame instead of the electric arc. There are numerous "so-called" searchlights on the market, but they are only cheap imitations of the real Navy standard type, and with them, as Mr. Tracy has perhaps noted, fast night riding is not safe.

S. W. RUSHMORE.

Plainfield, N. J.

### REPLY.

Editor THE AUTOMOBILE.

Sir:—Mr. Rushmore in his letter says that my article contains "many evident misstatements."

It does not require a "true Navy standard searchlight" to see that Mr. Rushmore has a chopping instrument to grind; this may be seen even with such a poor equipment as one of the "numerous so-called searchlights which are on the market."

The writer has driven rather fast at night—forty to fifty miles an hour—and, strange as it may appear, without the aid of the "true Navy standard searchlight." My car was fitted with "rigid lights." According to Mr. Rushmore, high speed would not be attempted by any "experienced driver" in a car fitted with such lights.

Further on Mr. Rushmore says: "With a large swing light mounted upon the dash . . . it is safer on most good roads to run at high speed by night than by day."

If this statement is correct, why not have the Gordon Bennett and Vanderbilt cup races run at night in future? The com-

peting cars would, of course, be equipped with "a large swing light mounted upon the dash or mounted out forward," preferably, "a true Navy standard searchlight."

Several other statements in Mr. Rushmore's letter, as, for instance, "the powerful light from the searchlight positively quiets horses," will be news to most experienced motorists. Possibly there may be a preponderance of the violet or soothing rays in the light emitted by Mr. Rushmore's searchlights; if this is the case, a brisk demand for "true Navy standard searchlights" may be expected—from the horse trainers.

Regarding Mr. Rushmore's statement that "horses are not frightened by the sound or smell of an automobile," how does he explain why a horse runs away when an automobile comes up from behind, when the horse cannot see it? Or, why it is not uncommon for blind horses to take fright on the approach of a car?

In conclusion, my references to "so-called searchlights" did not mean any lamp in particular, and the expression was used merely to distinguish the movable light from the fixed one.

JOSEPH TRACY.

New York.

### Thomas Racer Completed.

There may be two E. R. Thomas cars in the Eagle Rock hill climb on November 24, for the 60-horsepower Mercedes entered by E. R. Thomas, the New York broker, may be supplemented by a new 60-horsepower, six-cylinder racing car that has just been completed by the E. R. Thomas Motor Company, of Buffalo. This new machine, of which vague hints have been given from time to time, was last week completed and nearly assembled. A road test was to be given it this week, after which a racing body, patterned somewhat after the foreign cars that took part in the recent Vanderbilt cup race, will be put on.

It is not known yet who will drive the car in the hill-climbing contest, should it be entered, but Charles S. Henshaw, Boston representative for Thomas cars and a former tandem team mate of Charles Hedstrom, is mentioned as a possibility. C. J. S. Hill, the wealthy yachtsman and clubman of Warren, Pa., may, however, be first to drive the Thomas racer in a contest, as Mr. Thomas admitted last week that Mr. Hill had placed his order for a six-cylinder Thomas racer, which will be taken to Florida for the January tournament. Should it do well in the trials and races there, it is contemplated to enter it for the Gordon Bennett race.

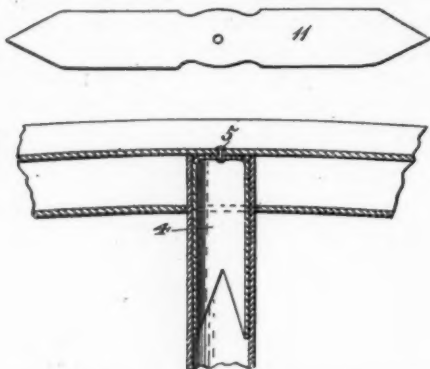
Although 60 horsepower seems low for a racing car, as compared with the 90-horsepower Panhards and Mercedes, the fact that the regular 1905 model Thomas Flyer of 40 horsepower is capable of making a mile a minute on good roads leads Mr. Thomas to believe that the racing car can take care of itself in very fast company. The result of the entrance of the Buffalo manufacturer in racing will be watched with interest.

# Patents

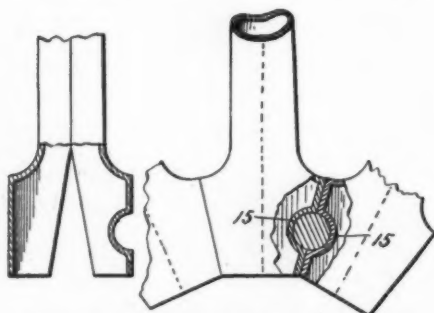
## Tubular Metallic Wheel.

No. 772,812.—T. Midgley, of Columbus, Ohio.

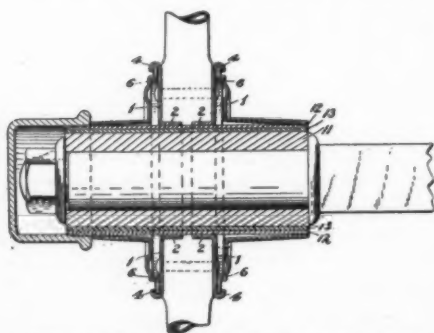
A wheel whose special feature is the reinforcement of the end of the spoke by means of a steel thimble 4, which is stamped from a blank 11 of the form shown in detail. This thimble is attached to the rim



MIDGLEY METAL SPOKE REINFORCEMENT.



MIDGLEY STEEL SPOKE AND FASTENING.



MIDGLEY PRESSED STEEL WHEEL HUB.

by a small rivet 5, which merely holds it in place until the brazing is accomplished.

## Metallic Wheel Spoke.

No. 772,814.—T. Midgley, of Columbus, Ohio.

This spoke is stamped up out of sheet steel and is welded to form a tube with a longitudinal seam, which is subsequently brazed. Instead of the transverse bolt passing through the base of an ordinary wood spoke, a bolt is used which passes through notches 15, which are formed in the last stamping operation.

## Metallic Wheel Hub.

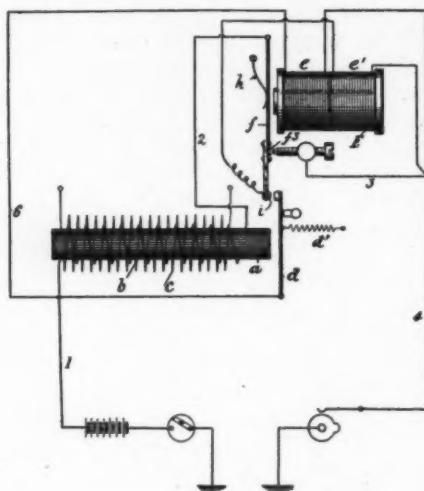
No. 772,813.—T. Midgley, of Columbus, Ohio.

A pressed steel hub, built up of portions 11 with flanges 22, and portions 66 attached to 11 by lips 44, and lined by bushings, 11, 12, 13 substantially as shown.

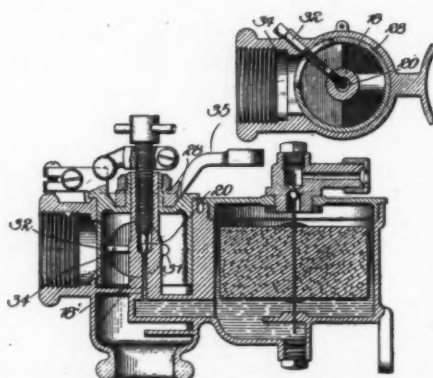
## Induction Coil Protector.

No. 772,590.—R. Varley, of Providence, R. I.

This device is a loose hood of soft rub-



VARLEY INDUCTION COIL.



KINGSTON FLOAT-FEED CARBURETER.



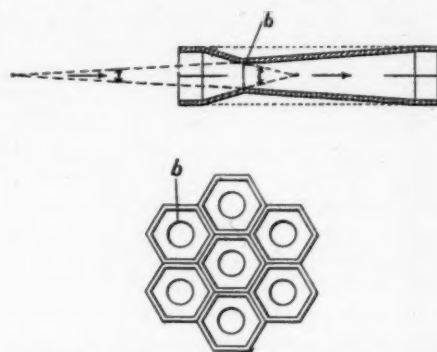
APPLE LEAD BATTERY CELL.

in a moment without disturbing any screw connections. The plugs are irregularly spaced, so that the coil cannot be incorrectly replaced.

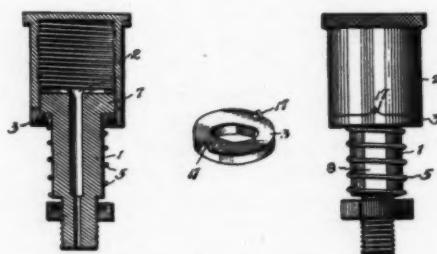
## Induction Coil.

No. 772,592.—R. Varley, of Providence, R. I.

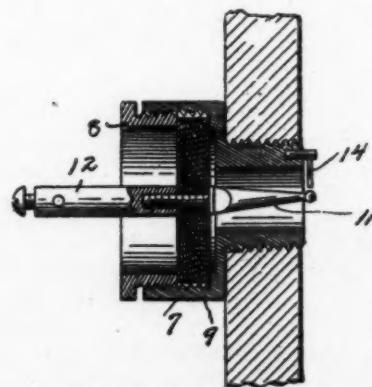
On the ordinary induction coil with magnetic vibrator it is desirable both to make the vibrator spring stiff enough to insure good contact between it and the contact screw, and at the same time to have the



GROUVELLE AND ARQUEBOURN RADIATOR.



BOWEN GREASE CUP CAP LOCK.



WISNER SPARK PLUG.

ber, arranged to be slipped snugly over the round coil, so that it protects the vibrator and attached parts. By reason of the flexibility of the hood, it is possible to adjust the vibrator without exposing it, by gripping the screw heads through the rubber.

## Induction Coil.

No. 772,591.—R. Varley, of Providence, R. I.

A coil in which the place of binding post is taken by spring contact plugs fixed on the post of the box holding the coil, so that the coil may be lifted out and replaced

spring light enough to demand the minimum of magnetic force to break the contact. The object of the present invention is to get around these conflicting requirements. The core and primary and secondary windings of the spark coil are represented by *a*, *b*, *c*, and the vibrator armature by *d*. An additional coil *E* is provided, which has two windings, *e*, *e*1, which are connected in relation to each other so that when current flows through both the magnetism of the core is neutralized.

The armature *d* strikes an insulated contact on the end of the armature *f*. When



the parts are in position shown, the principal battery current follows the path *i*, *b*, *2*, *f*, *3* and *4*. A portion, however, goes through *6*, *e* and *7*, thus energizing the magnet *E*. When *d* is attracted, it strikes the end of *f*, and breaks the latter's contact, thereby producing the spark; but it also makes contact at *i*, so that coil *ei* is energized, thus instantly neutralizing the magnetic attraction on *f*. Consequently, *a* has only the light springs *di* and *h* to overcome.

#### Carbureter.

No. 771,985.—G. Kingston, of Kokomo, Ind.

A modified form of the well-known Kingston carbureter. The spray orifice *34* is drilled in a tube *32*, which is screwed into the stand-pipe *18*. This orifice is located at one side of the passage, and as the passage is gradually closed by the shutter *28*, operated by lever *35*, the air stream is more and more concentrated on the orifice *34*. Thus the gasoline is always taken up by a sharp stream, and to prevent too much from being taken up when the passage is nearly closed, the threaded needle valve *20* is so connected to *28* that rotation of the latter partly screws down the needle, thus restricting the flow of gasoline to *34*. Means are provided, as shown, to adjust *20* and *31* relatively to the shutter.

#### Lead Cell for Storage Batteries.

No. 772,123.—V. G. Apple, of Dayton, O.

This containing cell is intended for small batteries, such as ignition batteries, and acts as one element as well as the case or jar. It has internal ribs *5*, as shown in the plan view herewith, which are dove-tailed, leaving spaces *6*, which may be filled with active material if the cell is to be of the "pasted" type. The bottom of the cell is indicated by *3b*.

#### Radiator Tubes.

No. 772,279.—J. Grouvelle and H. Arquebourn, of Paris, France.

A tube with hexagonal ends, which may be soldered together, as the end view shows, and which are contracted at *b* to a circular cross-section. The inventors claim that a minimum of resistance to the passage of air through the tube may be obtained by experimental selection of the angles indicated by the dotted lines.

#### Spark Plug.

No. 770,927.—W. Roche, of Jersey City.

A spark plug in which the porcelain is packed partly by asbestos or other fibrous packing, and partly by metal rings between the fibrous packing and the metal. These rings act as washers, the inner end of the stem has a mushroom head, from which the spark jumps across a space made by coning the end of the porcelain and of the body of the plug. In one form of this plug the stem is surrounded by a mica sleeve.

#### Spark Plug.

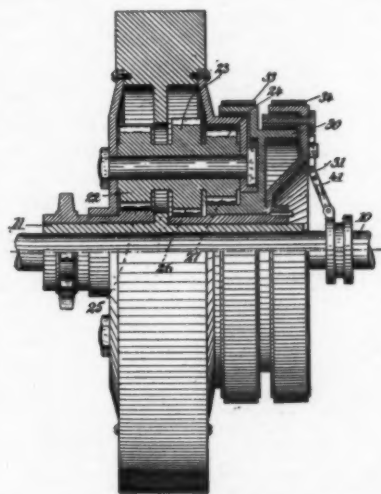
No. 772,856.—C. H. Wisner, of Flint, Mich.

This is a somewhat novel departure from the ordinary types of spark plug. The insulating material is a bundle of disks of mica *9*, whose edges are compressed between the shell *7* and the threaded bushing *8*. The center stem *11* is screwed into the binding posts *12*, thereby compressing the mica to prevent leakage. The stem *11* is surrounded for the most part by burnt gases.

#### Planetary Gear.

No. 772,274.—C. H. Day, of Hornellsville, N. Y.

The special feature of this gear is the formation of all the spur pinions for the several speeds in a single unit, as shown, together with the fact that they revolve at all times with the flywheel *12*, whose hub *11* is keyed on the engine shaft *10*. No internal gears are used. For the slow speed forward, band *34* is tightened, rendering *31*



DAY PLANETARY CHANGE-SPEED GEAR.

and gear *26* stationary. Pinions *22* and *23* then act as a lever fulcrum on *26*, and the slow speed is imparted to gear *25*. For the reverse, band *33* is tightened, rendering *27* the fulcrum and giving a reverse motion to *25*, owing to the fact that *22* is larger than *24*. For the direct drive, *30* and *31* are locked together by a clutch band and toggles *41*.

#### Vehicle Wheel.

No. 772,648.—T. A. Edison, Llewellyn Park, N. J.

This invention consists essentially in the use of sections of endogenous wood, such as the palm, arranged with the fibres extending radially. These sections may constitute merely a tire, in which case their merit is that of being formed of tough fibres connected by soft intercellular matter, so that their surface picks up the sand and dirt from the road and becomes filled therewith. This at once protects the wood from abrasions and gives it an anti-slipping

quality, stated by the inventor to be much superior to that of the pneumatic tire. The inventor prefers, however, to have these sections extend nearly to the hub, thus forming a solid, spokeless wheel, and with this construction he proposes to use a ring of pure and very elastic rubber between the inner ends of these sections and the hub proper, where it forms a protected elastic cushion.

#### Grease Cup.

No. 772,399.—G. W. Bowen, of Auburn, N. Y.

The object of this invention is to prevent possible jarring loose of the screw cap *2*. This is done by notching its lower edge to match projections *17* in a ring *3*, which surrounds the stem *1*. The latter has flattened sides *9*, which *3* fits, to prevent the latter from turning, and the spring *5* keeps the teeth and notches in engagement when *2* is not forcibly turned by hand.

#### Electric Vehicle.

No. 772,571.—H. P. Maxim, H. M. Pope and H. W. Alden, Hartford, Conn.

This patent, the application for which was filed in 1897, covers in a comprehensive manner many of the now familiar safety devices for using and charging vehicle batteries, and for commutating the same to control the motor speed. Patent has 31 claims.

#### Speed Indicator.

No. 772,625.—F. Montandon, Chaux De Fonds, Switzerland.

This is essentially a stop watch, which is stopped and started at regular space intervals by a friction wheel and flexible shaft, driven from one of the front hubs. The dial has a supplementary graduation, reading directly in miles or kilometers per hour, and when the vehicle is in motion the stop watch is successively started, stopped at the end of the distance chosen—e.g., 200 metres—and returned to zero. The driver is able during the alternate intervals to read his speed by the point at which the hand stops.

#### Battery Holder.

No. 772,415.—F. Jackson, Denver, Colo.

This invention is intended to dispense with binding posts. Each cell is placed in a compartment by itself, with a spring clip of metal, by which contact is made with the zinc shell of the battery. The top of this spring clip is extended into a spring of suitable form to make contact with the carbon element of the next cell.

#### Battery Charging Apparatus.

No. 772,030.—G. H. Conduct, of New York.

A movable table, resembling a turntable, on which an electric car may be run between guides to have its battery tray drawn out by power apparatus; with power means acting on the guides to locate the vehicle exactly in position.



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### Construction Tendencies Here and Abroad.

One feature which will distinguish the annual automobile show to be held in Madison Square Garden next January will be the number of large touring cars marketed by our builders, many of whom have been identified hitherto with the construction of light cars only. It is apparently coming to be recognized in all the automobile building countries that one type of machine alone is not sufficient for all needs, and that, as in the case of horse-drawn vehicles, there should be special consideration shown in design for the particular use for which the vehicle is intended, so as to insure the best results in operation. This recognition is also the cause of the intended construction of a "line of cars" by some of the builders who, in the past, made only the larger types. In each individual case the question of types is, of course, purely a business consideration. A number of builders who have made a splendid success of some one particular type, will stick to the construction of that type only, the needed output taxing all their facilities. In the American industry as a whole, however, there is a marked tendency toward the construction of the larger type of touring cars of the now conventional four vertical cylinder model.

Hitherto the greatest effort has been in the runabout class, in which, indeed, America now leads the world. The growth has

been indigenous and has proceeded along lines of gradual evolution from the early days when an automobile was practically an ordinary carriage with a motor attachment.

The motor in front type of car, with separate chassis (the modern road locomotive) is an exotic, and as such its cultivation was not as general as the domestic variety. A few far-seeing builders early adopted this form for the larger cars, and their names have come to be identified with the type. Yet it is doubtful if this type of car would have achieved its present popularity here had not the imported machines of the type demonstrated to the car-purchasing public the advantages of the model, in the larger sizes at least.

Educated on runabouts, the car-owning public wants larger and more powerful vehicles, and the home builders are going to meet the demand in the coming year.

Abroad the conditions are almost the reverse. The early invention of the modern four-cylinder motor-in-front tonneau car led to the concentration of attention on this type, and its rapid development was made possible largely by the practical trials in road races. Social conditions abroad, which give the rich and influential the lead in such movements as the introduction of the automobile into daily life, made a ready market for the higher-priced machines. The market for such machines is not inexhaustible, however, even in the wealthiest nations, and so the attention of the foreign builder turns to the smaller and lower-priced cars.

Our Berlin correspondent, in an article published in this issue, writes that even the originators of the costly Mercedes car are planning to build a low-priced machine. In the exhibition at Leipzig, which he reports, the small car, in many cases a direct copy of the American runabout, is numerous. In England the small car is now in the center of public attention; special trials for small cars have been carried out, and at the Stanley Show this month, the runabout class will have the floor.

It would seem that the present is a fine opportunity for the American runabout builders to work up an export trade. The situation abroad is almost a parallel for that which existed in the tonneau class in this country a year or two ago, and which stirred the activities and largely increased the profits of the French and German builders.

That great technical authority, the *New York Times*, in discussing editorially the airship of the future, expresses the opinion that "in all probability they will consist of a very simple plane surface, pushed along over the air by stronger and lighter engines than can be built at present."

We have italicized "over," but a lower altitude for ours when we take our maiden airship voyage.

The *Times* scientist admits the necessity for "stronger and lighter engines," and yet it is only a few days ago that he solemnly said that the "Vanderbilt race proved nothing of interest and value" in the practical development of automobile mechanics. Will our scientific contemporaries please explain how stronger and lighter engines can be built without such practical trials as the Vanderbilt and similar road races impose? Design, as we understand it, is only a process of trial and error, the latter minimized by the application of modern scientific knowledge. Wont the *Times* please disclose the secret whereby the maximum power output for the minimum weight of materials can be attained without severe and prolonged trials? But an editor who can ride "over the air" will find no difficulty in getting over any trifling technical difficulty of design.



### Automobile Insurance Liability.

In a letter received from a correspondent on the subject of automobile liability insurance, he calls attention to a clause in all the policies that have been offered to him by agents, which relieves the company from all liability in any accident occurring when the car is moving at a rate of speed in excess of that allowed by law. He says that in his locality an eight mile an hour limit is in force, and he has found by "following many machines" that the speed registered by his speedometer averages eighteen miles an hour. "What is the use of an insurance policy under these circumstances?" he inquires; answering his own query, however, by the statement that he is informed by the agents that the clause "don't mean anything," and that many cases have been defended and settled without reference to it.

The answer quoted is, of course, an interesting one. A disinterested reply is that any insurance company of repute is engaged in a lawful business and is not putting a premium on lawlessness. Were it the practice of an insurance company to issue policies that would enable any driver to break the law, the company guaranteeing him immunity from financial loss in case of damage to property or injury to person, would be a fit subject for investigation by the District Attorney in the locality where the company issued such policies.

Insurance companies are not privileged to disobey the law or to aid others in doing so, no more than private individuals. It is to their interest, indeed, not only to obey the law themselves, but in duty to their stockholders, not to accept the risks of law-breakers. The moral hazard has a well-defined place in insurance practice.

In every day affairs, the illegal storage of explosives in a building, for example, will vitiate all fire insurance policies covering the premises. Or in the case of a ship lost at sea, if it is proven that the vessel at the time



of the loss is engaged in some illegal enterprise, or is recklessly navigated in violation of law, it is a question whether payment of a policy could be enforced.

It is quite probable, as the agents informed our correspondent, that in case of loss under a policy where no question of the rate of speed is raised, the company may pay the loss without asking troublesome questions. Where the case hinged on a rate of speed in excess of that permitted by law, the company would certainly be acting within its rights to withhold payment. Otherwise, where would the line be drawn? If the legal limit is eight miles, would the man with a car capable of only twenty miles an hour and going at that speed be entitled to compensation, and the man with a car capable of seventy miles an hour and going at that rate of speed, be entitled to none, in the case of mishap covered by a policy? Who shall say?

#### NEW OFFICERS FOR A. L. A. M.

At the annual meeting of the Association of Licensed Automobile Manufacturers, held at the offices of the association, 7 East Forty-second Street, New York, on November 2, the following new board of officers was elected:

President, Charles Clifton, of the George N. Pierce Company, Buffalo, N. Y.; vice-president, W. E. Metzger, of the Cadillac Automobile Company, Detroit; treasurer, H. H. Franklin, of the H. H. Franklin Company, Syracuse, N. Y.; secretary, L. H. Kittredge, of the Peerless Motor Car Company, Cleveland, O. The board of directors stands unchanged, the members being Charles Clifton, F. L. Smith, E. H. Cutler, S. T. Davis, Jr., and M. J. Budlong.

The reports made concerning the season's business were considered favorable, and special comment was made upon the success of the recent meeting in New York City of the heads of mechanical departments.

The examination of witnesses in the Selden patent suits, now pending, was reported upon, but no mention was made as to the probable date of a decision.

If there is one word, more than any other, that those who build, sell, buy, drive, write about or talk about automobiles seem unable to get straight it is the simple one accelerator. Every man seems to have his own version of it. The automobilist who becomes intoxicated with high speed might be pardoned for calling it exhilarator, even if Daniel Webster *did* leave that word out of his book; but there is no excuse for such weird coinages as auxiliator, excelerator, excilirator and the many other similar mixtures used in this connection. An *ACCELERATOR* is that which accelerates or increases motion. Why not let it go at that?

There is a club of women in the city which ought to be called the automobile club, not that any of them own an automobile, but because they meet to "run everybody down." We got it in the neck the last time they met.—*Grenville (Mich.) Call*.

D. U. Brown has sold his motorcycle to a party in Manning. D. U. says his wife objected to the wearing out of his coat tails so often by flapping in the wind as he rode, so he was forced to sell it.—*Sac City (Ia.) Democrat*.

Milwaukee now records 320 licensed automobiles.

#### A. C. A. TICKET MADE UP.

##### Nominations for Officers and Governors by Board of Governors—Other Business.

Nominations for officers and governors were made at a meeting of the Board of Governors of the Automobile Club of America, held November 2 at the club headquarters in New York, the gentlemen selected being as follows:

President, Dave H. Morris.

First Vice-President, Colgate Hoyt.

Second Vice-President, William K. Vanderbilt, Jr.

Third Vice-President, C. G. Dinsmore.

Treasurer, Samuel H. Valentine.

Three Governors, to serve for three years, James L. Breese, Melville D. Chapman, Harlan W. Whipple.

The matter of building and equipping a suitable club house and garage was placed for consideration in the hands of a special committee consisting of A. R. Shattuck, Jefferson Seligman, Col. John Jacob Astor, William K. Vanderbilt, Jr., Arthur Iselin and Harlan W. Whipple.

The letter sent by the club to railroad superintendents regarding the failure of locomotive engineers to comply with the law in the matter of signals at grade crossings brought replies from the Long Island, Erie, New York Central, Pennsylvania, Lehigh Valley, New York, Ontario and Western and a number of other roads, stating that engineers had been instructed to live up to the requirements of the statutes.

The club will endeavor to have a State law passed compelling horse-drawn vehicles to carry lights after sunset. Investigation has shown that most of the villages and towns in New York and the neighboring States have no such ordinance, and those which have an ordinance do not enforce it.

The following were elected to active membership: E. Shriver Reese, president of the Automobile Club of Cleveland; Samuel Untermeyer and Clifford M. Bouggy.

The meeting for the election of officers will be held at the club rooms, 753 Fifth Avenue, New York, on November 21.

#### CHANGES IN AWARDS.

Changes have been made in the list of prizes awarded to automobile manufacturers at the St. Louis Exposition as follows:

Electric Vehicle Company, original award gold medal, raised to Grand Prize.

Packard Motor Car Company, original award gold medal, raised to Grand Prize.

Winton Motor Carriage Company, original award silver medal, raised to Grand Prize.

Olds Motor Works, original award silver medal, raised to gold medal.

E. R. Thomas Motor Company, original award silver medal, raised to gold medal.

#### AUTO SCHOOL IN TORONTO.

*Special Correspondence.*

TORONTO, Oct. 31.—A class for motor drivers will be opened in connection with the

Toronto Y. M. C. A. to-morrow. The advisory committee, consisting of Dr. P. E. Doolittle, president of the Toronto Automobile Club; W. A. Kemp, vice-president; A. F. Webster, secretary, and John Westren, a prominent member of the club, have drawn up the course.

The work will include a course of lectures and demonstrations in the mechanism, structure, and operation of electrical, steam and gasoline automobiles. There is a demand here for competent drivers, and the class is expected to give men such training as will fit them for the work. The course will cover twenty weeks.

#### ALBANY HALLOWE'EN PARADE

##### Queen of the Festivities Rides in One of Fifty Cars Participating.

*Special Correspondence.*

ALBANY, Nov. 1.—One of the main features of Albany's first general and official celebration of All Hallowe'en was an automobile parade, in which more than fifty motor cars participated. The Queen of the Day, who, as Queen Titania, ruled the festivities of the program from morning until midnight, the carnival committee, and the friends of the automobile men, all arrayed in fantastic costumes, rode in the cars, which were decorated with the carnival colors of orange, white and green flags, and various floral and other designs.

Matthew Van Alstyne's canopy-topped touring car was covered with white and yellow chrysanthemums, and in it rode Queen Titania and her maids of honor and pages. Dr. W. E. Milbank, vice-president of the State Automobile Association, had his Knox car completely hidden by the carnival colors, and had as passengers three little girls dressed in white. He led the procession, which traversed all the principal streets of the city.

Among those who had their decorated automobiles in line were: Walter Allen, F. G. Robinson, Thomas Hun, Frank Graves, Dr. Hakes, Joseph Taylor, John L. Mallet, Walter Lemley, J. Lucey, O. A. Quayle, E. R. Burnham, P. E. Martin, Howard Martin, Spencer Neemes, Charles M. Hyatt, John Newell, J. P. Randerson, Allan A. Gilmour, Alex. Kramrath, Harry Simmons, Jr., Henry Kramrath, Charles M. Page, J. B. Lyon, Fred. Griesman, Harvey Muller, C. D. Ransom and F. H. Fish, all of Albany; N. J. Battle, of Cohoes; E. M. Powell, of Waterford, and C. B. Benson, Arthur S. Gray, R. V. Rhodes, D. S. Van Allen, Edward W. Healey and Arthur Fitch, of Hudson.

There was but one accident—a collision between the cars of Messrs. Gilmour and Robinson, caused by the skidding of the rear wheels of the Robinson car, as it crossed the street car tracks. A young woman passenger was thrown out of the Robinson car and a comb she wore inflicted a slight scalp wound.

#### PERMITS DRIVING ONLY AT NIGHT.

*Special Correspondence.*

NASHVILLE, Tenn., Oct. 31.—The discovery of a long forgotten "blue law" on the statutes of Tennessee is being used as a threat by the agriculturists who object to the automobile on the turnpikes. It is said that suit may be brought under this law to put a stop to fast running on the turnpikes.

The old statute was framed to regulate the operation of steam traction engines when those machines were first used. It provides that any vehicle propelled by steam or other power, except horses, mules or oxen, may be operated only between the

## AMERICAN AND FOREIGN AUTOMOBILE AND AUTO-BOAT FIXTURES.

- Nov. 8.—Race Meet, Empire City Track, Yonkers, N. Y.  
 Nov. 24.—Hill Climbing Contest, Eagle Rock Hill, Orange, N. J. A. C. of N. J.  
 Dec. 9-25.—French Automobile Salon. Paris.  
 Dec. 26-Jan. 2.—Reliability Trials. Motor Union of Western India.  
 Jan. 11-24.—First Annual Importers' Automobile Salon, Herald Square Hall, New York.  
 Jan. 12-21.—Fifth Annual Automobile Show, Madison Square Garden, New York. N. A. A. M., Madison Square Garden Co. and A. C. A.  
 Jan. 14-24.—Fourth Annual Automobile Show at Brussels, Belgium.  
 Jan. 23-28.—Ormond-Daytona Automobile Tournament. Florida East Coast Automobile Association.  
 Jan. 23-28.—Philadelphia Annual Automobile Show. A. C. of Philadelphia and Auto. Dealers' Assn. of Phila.  
 Jan. 27-Feb. 4.—Fourth Annual Automobile Show, Crystal Palace, London.  
 Feb. 1-3.—Auto-Boat Races. Palm Beach, Fla. Palm Beach Power Boat Association.  
 Feb. 4-11.—Fifth Annual Automobile Exhibition, Chicago. Coliseum Building. N. A. A. M. and C. A. C.  
 Feb. 4-19.—Automobile Exhibition at Berlin, Germany.  
 Feb. 5-19.—Automobile Week, Nice, France.  
 Feb. 10-18.—Automobile Exhibition, London, England. Society of Motor Manufacturers and Traders.  
 Feb. 13-18.—Fourth Annual Exhibition at Detroit. Tri-State Automobile and Sporting Goods Association.  
 Feb. 21-March 9.—National Motor Boat Show, Madison Square Garden, New York. Nat. Assn. Engine and Boat Mfrs.  
 Feb. 27-March 4.—Cleveland Automobile Show. Cleveland Automobile Club.  
 Feb. 27-March 4.—Automobile Exhibition, Toronto Canada.  
 March 3-11.—Motorcycle Show, Liverpool, England.  
 March 6-11.—Third Annual Buffalo Automobile Show, Convention Hall, Buffalo. Buffalo Automobile Trade Assn. and Buffalo A. C.  
 March 4-18.—Fourth Annual Automobile Show, Boston. Boston Automobile Dealers' Assn.  
 March 27-April 5.—Fifth Annual Washington Automobile Show. Washington Auto. Dealers' Assn.  
 April 1.—Light Van Trials. A. C. of Great Britain.  
 April 2-16.—Monaco Motor Boat Fortnight.  
 June 26.—Mont Cenis Hill Climb.

hours of 9 p.m. and 4 a.m., and that such a vehicle must have a guard 200 yards ahead to give warning of the approach of the vehicle.

Imagine a big touring car preceded by a guard with a red flag or a lantern to wave off all travelers on the country road, and venturing out only by moonlight! Yet the law still stands on the books, forgotten even in its application to the traction engine, which now goes abroad at any time of day. It is considered hardly likely that a serious hearing would be given a suit brought under this statute.

### RELICS SOLD CHEAPLY IN CLEVELAND

*Special Correspondence.*

CLEVELAND, Oct. 31.—The first automobile auction ever held in this section was held here Friday and Saturday in the quarters formerly occupied by the Cleveland Automobile & Supply Company on Vincent street. Mr. Bowler, a machinery dealer, who has handled second-hand cars for several years, had bought up a large number of machines and also arranged for the sale of old cars for local and out-of-town owners. The sale was freely advertised in surrounding towns, and there were a number of out-of-town purchasers.

About seventy-five cars of all descriptions were disposed of, and as a rule they brought very fair prices, although there were some good bargains. Some of the machines were of historical interest. A white-enameled Winton touring car of the 1902 model, fitted with canopy top, was owned originally by Reginald Vanderbilt, and is the one in which he took his wedding tour, it is asserted, and was also the first American car with a canopy top in New York. The big Wick blue car, which attracted attention at the New York, Chicago and Cleveland shows three years ago, as being the largest and most expensive car built in this country at that time, was knocked down at \$765 to Roy York, of the F. B. Stearns Company, who will have it rebuilt. This car, which was built for Henry Wick, a Youngstown, O., millionaire, was damaged by a street car in bringing it to Cleveland, but it can be put into good shape for a small amount.

### EXPORTS OF AUTOS AND PARTS.

Exports of American automobiles and parts to foreign countries for the nine months, ending with September, 1904, aggregated in value \$1,445,986, representing an increase over the same period of 1903 of \$253,157, and over the same period of 1902 of \$598,000.

Exports of automobiles and parts for the month of September, 1904, reached the total value of \$123,487.

### NEW WHITE STORE.

#### Fine Establishment Completed in New York for White Sewing Machine Co.

The completion of alterations by the White Sewing Machine Company on the building at 42-44 West Sixty-second street, New York, marks the passing of a large livery stable and the establishment of another stronghold of the "emancipator of the horse." The new headquarters of the White are up-to-date throughout, every need of man and machine having been anticipated.

The basement is large and light, with cement floor, and extends under the entire building, 65 feet wide and 100 feet deep. It will be devoted to the storage of cars whose owners and chauffeurs prefer to do their own repairing and tinkering, and these will have ample opportunity to do all the work they desire. In the rear of the basement is a chauffeurs' room, the walls of which are lined with lockers.

Outside the building, to the rear, is a large gasoline tank, enclosed in solid masonry and piped to a pump, which is also enclosed in a brick house with iron door. In a corner of the basement is the boiler room, where the heating apparatus for the entire building is located. The boilers are enclosed in a brick vault with a solid fire-brick ceiling separated from the ceiling of the basement by a twelve-inch air space and a steel sheathing.

The large elevator for carrying cars rises to the top floor. There is also a small hoist, built like a dumb-waiter, to be used for tools, repair parts and supplies. The blacksmith shop, which is not completed, will be in the basement.

The main, or street, floor will be devoted entirely to "live" storage, those cars which are most constantly in use being kept there. The washing of cars will be done on this floor. An office is located to the left of the entrance, and just beyond this are two dressing rooms for women, equipped with every comfort and convenience. A passage from the office leads to a large number of owners' lockers. This corner of the building is particularly attractive. From the rear of the main floor an iron door gives entrance to the gasoline pump vault, already mentioned, which is entirely separate from the main building.

In the front of the second floor is the salesroom for new cars. It is handsomely finished in natural wood, with polished floor. Squares of heavy matting are provided for the cars to stand on. The main New York offices of the company are located on this floor and are handsomely furnished. Back of the salesroom is the second-hand car de-

partment, a large room where only second-hand cars will be placed for sale. To the right of this is the stock room, large and completely equipped with everything—from a tire to a complete engine.

The third floor, which is not divided, will be used for "live" storage, while the repair department is on the fourth floor. This entire story is given up to repair work, the rear portion being equipped with all necessary machine tools, driven by an electric motor. The fifth floor will be utilized for dead storage, and later part of it will be partitioned off for a paint room.

### RECENT INCORPORATIONS.

The Motoring and Boating Co., East Orange, N. J.; capital, \$100,000; publishers. Incorporators: James P. Holland, John H. Gerrie and Charles H. Munger.

Kensington Automobile Co., Camden, N. Y.; capital, \$100,000. Incorporators: V. W. Sipes, D. G. Cameron, E. C. Huselton and H. A. Tucker.

James Brown Machine Co., Providence, R. I.; capital, \$300,000; to manufacture motor cars. Incorporators: S. Fred. Carpenter, Susan A., Ruth S., Alice J. and James S. Brown.

American Canvas and Tarpaulin Corporation, Buffalo, N. Y.; to manufacture automobile and wagon covers, tarpaulins and sails.

W. J. Kells Mfg. Co., New York City; capital, \$15,000; automobile equipment. Incorporators: W. J. Kells, Marion, N. J.; Q. H. Timpson and F. E. Pratt, New York City.

St. Louis Automobile Service Co., St. Louis, Mo.; capital, \$2,000. Incorporators: W. H. Bradsley, C. E. Harris, A. G. Harding, E. L. and W. R. Morgan.

Wilson & Hayes Mfg. Co., Detroit, Mich.; capital, \$50,000; to manufacture automobiles. Incorporators: Thos. H. Wilson, H. Jay Hayes and Edwin A. Stevens, Jr.

Cleveland Automobile Dealers' Co., Cleveland, O.; capital, \$1,000. Incorporators: C. B. Haskins, G. S. Waite, C. M. Brocknay, L. M. Alenders and M. K. Eyre.

Garfield Automobile Co., Chicago, Ill.; capital, \$15,000; to manufacture automobiles. Incorporators: N. E. McDaniels, George Schein and Justus Chancellor.

East Coast Automobile Co., Jacksonville, Fla. Directors, D. H. McMillan, W. F. Coachman, H. E. McEachern, Guy Champ-lain, Ed. Groover, Telfair Stockton and P. L. Sutherland.



## AUTO-COACH LINE FOR WASHINGTON

*Special Correspondence.*

WASHINGTON, D. C., Oct. 31.—The probabilities are that within another month the National Capital will have a line of electric coaches for passenger service operating on a regular schedule and traversing a section of the city at present without street-car service. It is understood that a company has been formed with this object in view, which will have ample financial backing, and will put into service a sufficient number of automobile coaches to meet all the requirements of the traffic.

The coaches will have a capacity of forty passengers each, and the rate of fare will be five cents. The company is now waiting to receive from the manufacturers one of the coaches to place on the route. When this arrives, formal application will be made to the District Commissioners for the necessary permit to operate it. It is believed this permit will be readily granted in view of the benefit to the traveling public which will result.

## NEW ONTARIO REGULATIONS.

*Special Correspondence.*

TORONTO, CAN., Oct. 31.—The Ontario government recently issued an order in council containing new regulations for automobiles. In brief the regulations provide a fee of \$3 instead of \$2 for license and number tag. The latter remains the property of the Province and is taken up if the owner of the auto license does not comply with

the regulations. This would, of course, immediately bar the automobiles from the use of Ontario roads. The number tag must always be displayed on the automobile.

Manufacturers will receive special tags for autos they are offering for sale. These may not be used by manufacturers on their private vehicles, nor may they be used on autos at a distance of more than five miles from the manufacturing establishment or showrooms.

The last regulation is considered a hardship by dealers, as they claim it is often necessary to drive a new car several miles into the country to demonstrate it to a customer, a common run for this purpose being from Toronto to Hamilton, a distance of fifty miles. The Provincial Secretary, on the other hand, when seen by THE AUTOMOBILE man, stated that the dealers were themselves to blame, as they had abused their privileges by allowing machines to be driven all over the country at reckless speed, with the result that numerous complaints from the police had been received.

At a recent meeting of the Common Council of Buffalo a resolution was adopted directing Superintendent Bull, of the Police Department, to enforce the provisions of the automobile law, and to see that automobiles do not travel faster than "a reasonable and proper rate of speed." The resolution was introduced by Alderman Martin, adopted by the Board of Aldermen and sanctioned by the Board of Councilmen.

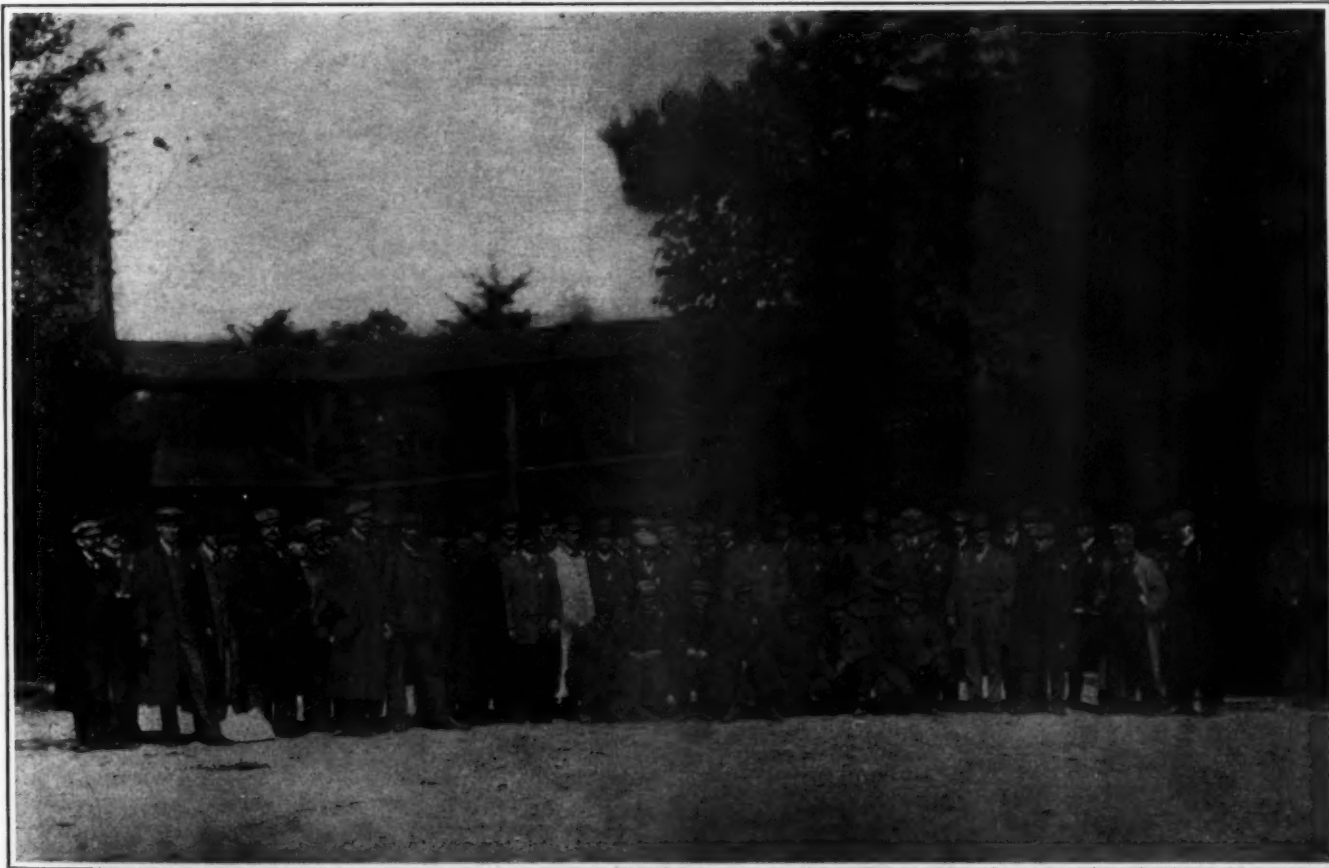
## TWO AUTO SHOWS FOR BOSTON.

*Special Correspondence.*

BOSTON, Oct. 31.—Plans now under consideration provide for the holding of two automobile shows here in March, one under the direction of the local dealers' association, and the other an importers' salon similar to that which will be held at Herald Square in New York at the time of the Madison Square Garden show. Two months ago there was talk of two shows in Boston, to be managed by factions of the local dealers, but the disagreement which caused that talk was settled and the Boston Automobile Dealers' show in Mechanics' Hall will have as a competitor for patronage only the importers' salon.

After the dealers' association had secured the N. A. A. M. sanction, the members of the Boston Automobile Trade Association were invited to come into the regular show in Mechanics' Hall, which was finally done. This show ought to be the biggest exhibition of automobiles ever held in New England. In Mechanics' Hall there is much more space than in Symphony Hall, where the show was held last year and the year before, and there has been a demand for space which will test the capacity, even, of the big hall.

The importers' salon will be along much the same lines as in New York. The local agents for foreign cars will show in Mechanics' Hall, and the New York agents will show in Symphony Hall. It will be the first time that Bostonians have had a chance at home to see the big foreign cars.



Group of men at the heads of the technical and mechanical departments of the plants of members of the Association of Licensed Automobile Manufacturers, photographed at the Ardsley Club upon the occasion of the seventy-mile automobile run from New York City to Elmsford, N. Y., and back, October 7. At ten points along the route the entire procession of eighteen gasoline cars, all of American manufacture, were stopped and the occupants changed cars, so that every man rode in ten different cars besides his own, thereby becoming more familiar with them all. Luncheon was served at the Ardsley Club, and upon returning to New York the party of fifty-three had dinner at the Casino in Central Park, during which the project of forming a branch of the A. L. A. M. was discussed. The following day most of the men attended the Vanderbilt Cup Race, the report of which event prevented the appearance of the accompanying engraving in our issue of October 15, along with the account of the convention.



## OHIO VALLEY CLUB FORMED.

Organization Effected at Steubenville to Promote Automobile Interests

*Special Correspondence.*

COLUMBUS, Ohio, Oct. 31.—Automobilists of Ohio valley cities met last week at Steubenville, and effected an organization which proposes to become a member of the American Automobile Association. Twenty-two persons were present, representing Steubenville, Toronto and Brilliant, of this State, and Wellsburg, W. Va.

After a general discussion of the objects of the organization, S. C. Gill, of Steubenville, was appointed chairman, and a committee, consisting of the chairman, J. C. Lashley and F. E. Low, of Steubenville, and Asa G. Neville and F. A. Chapman, of Wellsburg, was appointed to confer with Pittsburg and Wheeling associations to secure information which will be useful to the local club in perfecting its organization. Great enthusiasm was displayed at the gathering, and everything indicates that the movement will promote automobiling in the Ohio valley, between Pittsburg and Wheeling, and place it on a splendid basis.

The club will use its best endeavors to advance the good roads movement, which is being agitated in Ohio, and in this particular will be of much help to Hon. Samuel Huston, of Steubenville, State Commissioner of Highways, who will establish his office soon after the first of the new year. This department was created by the General Assembly of Ohio last winter, but as the appropriations for its maintenance were not made available until 1905, Commissioner Huston has been unable to do anything officially yet. He is an earnest advocate of good roads, and has devoted many years to the study of this question.

The members of the club will co-operate with the authorities in the enforcement of all laws regulating the use of automobiles, as well as the driving of teams. One of the things that the association will strive especially to do will be to discourage reckless driving of automobiles in disregard of danger to other users of the highways. The laws regulating speed will be rigidly observed.

## WANT GLASS THROWERS PUNISHED.

*Special Correspondence.*

PHILADELPHIA, Oct. 31.—At a recent Friday night regular meeting of the Automobile Club of Philadelphia, it was proposed that the club introduce a measure at the next meeting of the Legislature by which any one convicted of throwing nails, tacks and broken glass on the highways may be suitably punished. An endeavor will be made to enlist the co-operation of motor-car owners and tradesmen all over the state. As many blooded horse drivers are now using pneumatic-tired speed wagons, they are sufferers in common with the automobilists—indeed, they suffer more, for the thin tires of a horse-drawn vehicle are much more easily punctured than are the heavy tires of automobiles. An effort will therefore be made to enlist their aid in the war against the common enemy.

The various toll fights came up for discussion, but nothing was done except to urge the members to gather all data for use in the future, when an organized effort will be made to keep the demands of the turnpike companies within bounds.

Some talk of a parade was indulged in, but the scheme was indefinitely postponed, another cross-country "run" having been decided upon. With the experience gained, each of these affairs is over a longer route than its predecessor, and it is quite likely that the next event will be to Atlantic City and return—about 120 miles. One feature of this run will be that the committee will decide to a minute the minimum time in which the run can be legally made, and all contestants finishing inside the limit will be disqualified. The cup, which will be hung up by Horace A. Beale, Jr., will be awarded to the car finishing nearest the limit and outside of it. The carrying of watches or speedometers by the contestants will be forbidden.

## CLEVELAND DEALERS ORGANIZE.

*Special Correspondence.*

CLEVELAND, Oct. 31.—The Cleveland Automobile Dealers' Company has been organized, with \$10,000 capital stock, by Clifford B. Haskins, George S. Waite, Clarence E. Brockway, L. M. Henters and M. K. Eyre. This is the outgrowth of the dealers' association, which was formed a short time ago. The charter gives the association the right to hold automobile shows, race meets and other ventures of interest to the automobile trade and sport.

The persons who conducted the local shows heretofore, and who threatened for a time to make trouble with the new dealers' association over the matter of a sanction for the show here this winter, have been won over and will co-operate with the new organization. The date for the local exhibition this year has not been decided upon, and a meeting will be held this week for that purpose and to elect officers.

## NOTES OF THE CLUBS.

PRINCETON, N. J.—The Princeton Automobile Club, recently organized, has elected the following officers for the ensuing year: Childs Frick (1905), Pittsburg, president; S. H. Bird (1906), New York City, vice-president; J. S. Martin (1906), Belleville, N. J., treasurer. The charter membership of the club numbers more than thirty.

BOSTON, Mass.—The Boston Chauffeurs' Club has been formed, with the following officers: Frank Butler, president; Lewis Wallaston, vice-president; W. E. Layman, secretary, and A. L. Bennett, treasurer. A committee was appointed to draft by-laws and regulations to be submitted for adoption at an early meeting.

OSHKOSH, Wis.—Twenty local machine owners have formed the Oshkosh Automobile Club. Constitution and by-laws were adopted and the following officers elected: Dr. H. B. Dale, president; A. H. Meyer, vice-president; W. J. Campbell, secretary, and Frank Gates, treasurer. The president appointed the following committee to secure new members: Dr. W. H. Titus, Frank Gates and Leorr Chase.

KANSAS CITY.—The A. C. of Kansas City recently instructed its attorney to make a test case of the validity of the new ordinance requiring licenses for the operation of automobiles in this city. A case will probably be taken to the Court of Appeals, and from there to the Supreme Court of Missouri, thus reaching a final decision quicker than by the usual process through the criminal courts.

BUFFALO.—It has been found by the officers of the Automobile Club of Buffalo that the present headquarters at 59 Franklin street are not in a satisfactory location, and it is possible that the club may move to new quarters in the Teck Theatre Building on January 1. A movement toward that end is now afoot. The rooms on Franklin street are attractive and modern in every particular, but it has not proved the popular meeting place of automobilists that was expected, and prospects of the rooms becoming the headquarters of members and motorists have waned. The Teck Theatre Building is right in the heart of the automobile trade district.

PHILADELPHIA.—After a delay of nearly three weeks, the Tours and Runs Committee of the Automobile Club of Philadelphia announced the result of its cross-country run on October 1. The committee decided that C. H. Gillette's protest over a four-minute delay at West Chester was legitimate, and that W. O. Griffith should be allowed three minutes for a similar delay. This gave the E. Bartol Brazier cup to Gillette, who beat Griffith's time by four minutes. Macmillan Hoopes finished third; L. Knowles Perot fourth; S. E. Hutchinson fifth; H. A. Beale, Jr., sixth, and Kern Dodge, seventh. No times were announced.

SPRINGFIELD, VT.—Secretary W. D. Woolson, of the Vermont Automobile Club, has recently compiled a list of all of the owners of automobiles in the State of Vermont, so far as he has heard from them. There are 215 names on his list, but he estimates that there are not less than 275 owners, as many new cars have been purchased lately whose owners' names have not yet been listed. The machines are divided among the towns of the State as follows: Burlington, 38; Barre, 27; Brattleboro, 26; Rutland, 21; St. Johnsbury, 16; Richford, 10; Montpelier and Bennington, each 7; Woodstock, 6, and South Londonderry, Springfield and St. Albans, each 4.

LEAVENWORTH, KAN.—At a recent meeting of the Interstate Automobile Association, held here, officers were elected for the ensuing year as follows: Omar Abernathy, Leavenworth, president; H. N. Strait, Kansas City, vice-president; "Ned" Osborne, Topeka, secretary; Dr. Beitzel, Atchison, treasurer. This association is composed of motorists of Missouri and Kansas and meets every year. The next meeting will be held in Kansas City. Fifty members were in attendance. Committees were appointed to prepare maps of Missouri and Kansas roads and to work with the farmers to secure good roads legislation, which has been recognized as a great need. Candidates of both the political parties are running for election in both States on the issue of good roads alone, and are receiving hearty support.

WASHINGTON, D. C.—A movement started by Whitman Osgood, John C. Wood, A. L. Cline, and other leading automobilists here seems likely to result in the organization of a strong club. The National Capital Automobile Club, formed several years ago by General Nelson A. Miles, W. J. Foss, and others, has gradually declined, until to-day it exists in name only. The need of a strong club that would combine sociability with practical work in fighting oppressive legislation in the District of Columbia and the adjacent states, is becoming more evident every week. There are between 800 and 900 motorists in Washington, and the promoters are awakening interest in the project by personal interviews with those whom it is desired to have identified with the club. One of the propositions is to have a clubhouse on one of the roads leading out of the city into Maryland or Virginia.





The executive committee of the National Association of Automobile Manufacturers, Incorporated, held its regular monthly meeting at the rooms of the association, 7 East Forty-second street, New York, on Wednesday, November 2, fourteen members being present out of a total membership of fifteen.

The show committee reported that sanctions for shows had been refused the Automobile Club of Springfield, Mass., and the Automobile Club of St. Louis, Mo., and that agreements had been reached between the clubs and the dealers' associations in Buffalo and Cleveland, to whom sanctions will be granted shortly.

The freight committee regretted to report that the railway Official Classification Committee had refused its application for a reduction of freight rates on automobiles. The freight committee was thanked for its efforts and dissolved.

The association's counsel, Mr. Terry, submitted the opinion that it was contrary to the Federal constitution and to the constitutions of many of the States to require automobilists to take out state, township or county licenses. As the committee did not feel inclined to urge the abolition of all licensing, however, the matter was referred back to Mr. Terry for an opinion as to whether a license issued in one state must be recognized in other states.

General Manager Samuel A. Miles reported that the allotment of space at the New York and Chicago shows had been commenced, but would not be completed before the middle of next week. Announcement of the disposition of space will be made a few days thereafter.

The Commercial Motor Vehicle Company, of Detroit, Mich., was admitted to membership in the association.

The January meeting of the executive committee will be held at Madison Square Garden on Tuesday, January 17, during show week, and the annual meeting will be held on the following day, Wednesday. The annual banquet will be held in the same week, and will be in charge of a committee to be appointed by the president of the association.

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George Arents, Jr., the young millionaire who was injured in the Vanderbilt Cup race, was removed from the Nassau County Hospital, Mineola, a short time ago and taken to the Garden City Hotel. His memory and reasoning faculties are somewhat affected at present by the clot of blood which presses on his brain; but the physicians expect that this will dissolve in time and entirely relieve the condition.

\* \* \*

There will be an automobile race meet at the Empire track, Yonkers, N. Y., on November 8, election day, the star event of which will be a special match race between Maurice G. Bernin, driving W. Gould Brokaw's 60-horsepower Renault, and Paul Sartori in A. G. Vanderbilt's 90-horsepower F.I.A.T. The track is in fine condition for racing owing to the work done on it for the meet on October 20. In addition to the match race there will be a one-mile handicap race for gasoline cars selling for less than \$1,000; a two-mile open race for American touring cars; a two-mile race for the amateur championship cup; the five-

mile Empire handicap, and the popular International handicap which will be run in heats of three miles, and a final of five miles, a heat for each country represented. It is possible that Edward Hawley will drive E. R. Thomas's 90-horsepower Mercedes in the International, and also in a record trial.

\* \* \*

Eagle Rock Hill is a lively mile of road on fine days, Sundays in particular, many automobilists who have entered or intend to enter for the hill climbing contest on November 24 taking practice runs and getting a line on the ascent. Those who attack the hill have to do so almost from a standing start, as there is a very bad gully only a few yards from the commencement of the grade, and it is impossible to take a run at the hill. The Automobile Club of New Jersey, which is promoting the meet, will have this remedied in time for the contest, however, and other minor objectionable features will be removed. It has been decided that contestants will be given only one trial, though a number have asked for two. With the large entry expected this would be impossible. Entries may be made with C. H. Gillette, secretary of the club, 31 West Forty-second street, New York.

\* \* \*

The Y. M. C. A. course in automobile instruction promises to be a decided success. The applicants up to November 1 numbered about 80, and a postponement of the opening, which had been set for October 31, was made necessary owing to the inadequacy of class arrangements. A large proportion of the applicants for instruction are young men who expect to become professional chauffeurs.

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One of the features of automobile race meets, and one that was particularly noticeable at last Saturday's meet at the Empire track in Yonkers, is the fact that the band generally butts in and commences to bray just as the announcer is performing a megaphone solo, and all hands, the newspaper men in particular, are stretching their ears to the utmost to catch the times. The things the reporters said about the musicians were not of a complimentary nature, and did not bear on musical matters.

\* \* \*

Chief Croker, of the New York Fire Department, had a narrow escape from injury while going to a fire in his automobile early in the morning of October 31. The car was running at high speed, when a hole in the road was struck. The force of the rebound was so great that the chief was shot into the air, and only missed being thrown into the street by the narrowest margin. He was considerably shaken up, but recovered in a few minutes.

\* \* \*

The R. E. Hardy Co., formerly known as the Detroit Motor Works, has removed to New York City, where it has secured a location in the downtown business district at 225 West Broadway, near Franklin street. The original company was incorporated in July, 1900. It now has a line of twenty-one different sizes of Sta-Rite spark plugs, a gasoline gauge, spark coils, timers, dynamos and other specialties.

A meeting was held in Bretton Hall, Broadway and Eighty-sixth street, New York, on the evening of October 29 to discuss the proposition to organize an automobile club in New York which should be run on popular lines, with nominal initiation fees and dues. S. A. Miles was appointed temporary chairman and L. R. Smith temporary secretary, and the New York Motor Club was agreed to as a name. It was decided to issue a general call for a meeting to be held on Wednesday, November 9, to go more deeply into the matter. A suite of rooms on the top floor of Bretton Hall was offered for use as a club home by J. D. Price. Those present were "Senator" Morgan, R. L. Lounsbury, W. C. Conklin, A. Scheller, Isaac B. Potter, J. Eustace, J. D. Price, E. T. Horsey, J. S. Smith, Walter Wardrop, J. M. Capels, E. V. Stratton, Frank J. Griffin, John C. Wetmore and Ed. Spooner.

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The Park Commissioners of New York City have posted notices on Riverside Drive announcing a reduction of speed to 8 miles an hour from Seventy-second street to One Hundred and twenty-eighth street. The former maximum speed allowed on Riverside Drive was 10 miles an hour, the same as in the ordinary city streets, but the Commissioners have taken advantage of their powers to regulate speed in the park system, to which Riverside Drive belongs, to make the reduction.

\* \* \*

The regular Tuesday evening meetings of the Automobile Club of America will be resumed at the club house, 753 Fifth avenue, New York, on Tuesday evening, November 15. It was at first intended to hold the first meeting on November 8, but this was afterward changed to the later date. The subject for the lecture, which is always a feature of these assemblies, will be announced later.

\* \* \*

The New York City garage of the Pope Manufacturing Company, which is now under construction on Broadway between Fifty-fifth and Fifty-sixth streets, will have a capacity of 168 machines in addition to those in the salesrooms. The building will be ready for occupation about the first of the year.

\* \* \*

Théry and Caillois, the Richard-Brasier drivers, are booked to leave for France this week, though it was hoped they would stay over for the race meet at the Empire track on the following Tuesday. Both expect to return and take part in the Ormond Beach automobile tournament in January.

\* \* \*

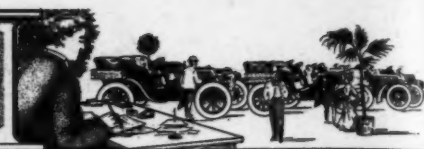
Hollander & Tangeman, American agents for the Italian F.I.A.T. cars, have added to their establishment the adjoining building. The partition walls have been torn down and when all work is completed the firm will have plenty of room for both garage and offices.

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A. L. Picard has resigned his connection with the American Darracq Company, New York City, and has accepted the sales managership of the Walter Car Company, of the same city. The company will establish a garage at Fiftieth street and Broadway.



## NEWS AND TRADE MISCELLANY



Among the legislative matters that will be called up early in the next session of Congress are the Boutwell bills reducing the tax on pure grain spirits from \$1.10 to 70 cents a gallon and granting free methylated alcohol for industrial purposes. Automobile manufacturers and users are interested in these two measures, and it is expected that the trade will join with other industries in urging Congress to enact the desired legislation. Alcohol is used extensively in the automobile industry, while the increasing price of gasoline suggests alcohol as a fuel for internal combustion engines if the tax is removed.

Minneapolis automobile dealers tried conclusions last Monday afternoon on the State Fair Ground track, and G. W. Caplin, in his 35-horsepower Royal, was an easy winner. The race was for ten miles, which Mr. Caplin covered in 12:40 1-5. He was nearly three-quarters of a mile in the lead of A. C. Bennett's 20-horsepower Winton. Ralph Bayle, in a 22-horsepower Packard, was third; L. H. Fawkes' Rambler, fourth, and W. G. Benz, in a Ford, fifth. The Royal took the lead from the start, and increased it with every mile. The most interesting fight was for second and third positions.

The Winton Motor Carriage Company has made formal announcement of its line for next season. There will be four cars in the line—a 40-horsepower car at \$4,500, a 40-horsepower car at \$3,500, a 24-horsepower car at \$2,500, and a 16-horsepower car at \$1,800. All of the cars will be fitted with four-cylinder motors of the vertical type, in contrast to the two-cylinder horizontal motors which the company has always advocated heretofore. The \$4,500 and the \$3,500 models will resemble each other mechanically, but the higher-priced car will have a special body and improved fittings.

José Belin, who has been manager of the Automobile Garage and Repair Company of Cleveland, has resigned his position and will go into business for himself. He will have an establishment on Canal street, where he will handle a number of French specialties, and will also manufacture several articles of his own design. Mr. Belin has been appointed instructor of a class of automobile engineering in the local Y. M. C. A. course. More than fifty young men have taken up the course, indicating the amount of interest in this subject in Cleveland.

The assessment on automobiles in Minnesota has been raised by the State board of tax levy 33 1-3 per cent. This increases the average valuation in the State from \$479.52 to \$636.96. The assessment in Ramsey county, in which St. Paul is located, was raised from \$309 to \$463.50. The returns show 374 automobiles in Minneapolis and ninety-four in St. Paul. In considering St. Louis county it was found that there were nine automobiles in Duluth. The average assessment of \$331.25 was raised 25 per cent.

The October number of *The Launch*, a house organ published quarterly by the Truscott Boat Mfg. Co., of St. Joseph, Mich., contains some well illustrated and interesting articles. Among them is the narrative of a launch tour of sixty miles through a chain of beautiful lakes and small rivers, from Cheboygan to Oden, Mich., an announcement of the company's intention to place in the market next season three sizes of auto-boats of a type intermediate

between the racing boat and the family pleasure launch; reviews of the season's auto-boat racing in home waters and abroad, a double-page halftone engraving from a photograph of the boats in the Transportation Day parade at the St. Louis Fair, and some useful hints on gas engines and the care of a launch.

The first car turned out by the new Reo Car Co. (first organized as the R. E. Olds Co.) in its temporary factory in Lansing, Mich., was completed last week and tested by Mr. Olds, who expressed himself as being pleased beyond expectation with its performance. The car has a 16-horsepower engine and weighs only 1,400 pounds, it is said, although the aim of the builders was to produce a car with one horsepower for every 100 pounds. The new Reo car is built along French lines and, Mr. Olds states, "climbs a hill like a skyrocket."

An unprecedented drouth in Tennessee has covered the fine limestone turnpikes with several inches of blinding, choking dust and has made motoring small pleasure. Every car that leaves Nashville returns with a white coating of dust which is alike destructive to temper and machinery. Motorists and farmers have found a common cause at last. A treatment of crude oil such as the Vanderbilt race course had would be welcomed by all.

A five-ton electric truck with a carrying capacity of 7 1-2 tons of flour, has been put into service in Minneapolis by the Pillsbury Company, probably the largest flour milling concern in the world. This truck, which was bought through the Pence Automobile Company, local agents for automobiles, was put into service October 22, and marked the introduction into the northwest of the latest and most approved means of handling merchandise in large quantities in the city.

The Diamond Rubber Co., of Akron, O., has opened a branch at 611 First Avenue S., Minneapolis, where W. E. Roby will be in charge, and another at 3966 Olive street, St. Louis, under the management of R. L. McCrea. The new stores were opened about November 1, and will carry complete stocks of Diamond tires.

The Packard Electric Co., Ltd., of St. Catharines, Ont., is erecting a new automobile plant in that city, which it expects to have in operation by the first of the year. It will be given a fixed assessment by the municipality, for which it agrees to employ a minimum of fifty hands and pay \$25,000 annually in wages.

The Locomobile Company of America reports that a large amount of money is being invested in new machinery to enable the plant to handle work promptly. The additional machine tools include gear cutters, screw-cutting machines, cylinder boring machines, valve grinders and forging machinery.

The Wilson & Todd Manufacturing Company has removed from its original location at 246 Jefferson avenue, Detroit, to 12 and 14 Sherman street in that city.

Dr. John C. Robinson, of Wilmington, Del., who purchased a new touring car recently, made a round trip last Friday, between Wilmington and Philadelphia, without making any stops en route, covering the distance (26 miles each way) in about four hours' actual riding time. The road between Wilmington and Philadelphia is

very hilly and rough in places, and it is necessary to run through Chester, where the speed limit is very low.

Frank H. Stolp, who on September 1 resigned the general managership of the Long Manufacturing Company, of Chicago, Ill., has organized a company called the Stolp Manufacturing Company, of Chicago, with headquarters at the northwest corner of Huron and Townsend streets. The object of the firm will be the manufacture of a wired cooler tubing invented by Mr. Stolp. The company expects to have goods on the market in a very short time.

Lack of storage room at the Broad Street headquarters of the Philadelphia branch of the Thomas B. Jeffery Company has necessitated the leasing of a large warehouse at Twenty-seventh and Thompson streets. This depot will be used as the distributing point for Rambler automobiles throughout Pennsylvania, New Jersey and Delaware, the present quarters being retained for sales and exhibition purposes.

The business formerly conducted by Harry R. Geer, "The Motorcycle Man," of St. Louis, Mo., will hereafter be carried on under the name of the Harry R. Geer Company, on the same lines and under the same management. This concern makes a specialty of motorcycles and supplies, both as manufacturers and jobbers.

Nashville, Tenn., now has a law requiring the use of large and legible numbers on automobiles. The Nashville Automobile Club offered no objections to the law, as the committee of the city council which framed it accepted a number of suggestions from a prominent attorney who is an enthusiastic motorist.

The Haynes-Apperson Company, Kokomo, Ind., states that its two-cylinder car was the only two-cylinder machine at the St. Louis Exposition to receive a gold medal, and for that reason the award is considered particularly valuable.

We are informed by the Locomobile Company of America that two Locomobile touring cars have been employed for campaign work by the Republican candidate for the governorship of Illinois, who has been enabled to do a large amount of extra work with their aid.

The Whitlock Coil Pipe Company, Hartford, Conn., is preparing to increase the floor area of its factory by about 20,000 square feet, this having been made necessary by the increased volume of automobile cooler business.

The Timken Roller Bearing Axle Company, Canton, O., states that its bearings were awarded a gold medal at the St. Louis Exposition for the best anti-friction bearings for automobile axles.

Oakes & Dow Company, 40 Ludbury Street, Boston, Mass., has made an improvement in the Comet spark plug, and the new design can now be delivered in quantities.

The Marion automobile will be represented in Philadelphia by Neill Wolfe, who has opened an agency at 215-217 North Broad Street.

The Oleo spark plug is being imported direct from the manufacturers by the Angier Company, 43 Columbus Avenue, Boston, Mass.



## INFORMATION FOR BUYERS.

**PLANETARY GEAR.**—A new planetary transmission for automobiles up to 10 horsepower has been placed on the market by the Western Tool Works, Chicago, Ill. It is the same as that used in the company's new Gale car. The illustrations show the construction clearly. A cone clutch is used for the direct high-speed drive, and substantial malleable iron friction bands for the low speed and reverse. The manufacturers state that the clutch and bands require no adjustment for wear, hold firmly and without slip, and release entirely without drag; that the casing is air-tight, and that the number of gears used is smaller than on any similar device at present manufactured. The reduction on the low gear is 21-2 to 1, and on the reverse 3 to 1. With shaft, the gear weighs 65 pounds. It is 10 1-2 inches in diameter.

**CAP AND CAPE.**—The Springfield Hat and Cap Company, 27-35 Taylor street, Springfield, Mass., has designed a combined cap and cape for use by automobilists in rainy weather or when protection from dust is needed. The illustration gives a good idea of the appearance of the combination. The cape is of rubber, with a flannel lining, and buttons in front. It covers not only the neck of the wearer, but both shoulders as well. When folded,



SPRINGFIELD CAP AND CAPE.

the whole thing will go into the pocket, and can easily be carried in the tool box for use in case of necessity. Made in all sizes.

**MUFFLER AND WHISTLE.**—The Dayton Electrical Manufacturing Company, Dayton, O., is placing on the market a muffler which is claimed to be the most silent and free from back pressure of any muffler made. In addition, it has several special features. The head is not rigidly secured to the body, but is held in place by a stiff coiled spring. If an explosion occurs in the muffler the head will be forced out of place sufficiently to permit the excess pressure



DAYTON MUFFLER WITH WHISTLE.

to escape without doing any damage, and will reseal itself. A chime whistle is placed in the head and sounded by the pressure of the exhaust, and by turning the head on its axis a sort of butterfly valve cut-out is opened. A point cited in favor of the Gray muffler is that it can be attached by

any automobile owner without his having to hire a mechanic to do the job.

**A HANDY SCREW-DRIVER.**—The Vanderbeek Tool Company, Hartford, Conn., is turning out a tool called Vanderbeek's Sensible Screwdriver, which has the appearance



VANDERBECK SCREWDRIVER WITH DETACHABLE BLADES.

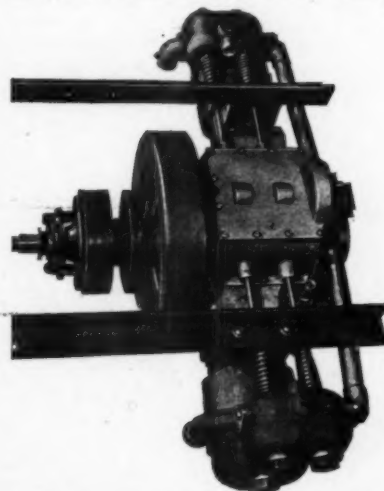
of being an exceedingly convenient affair. Instead of having the blade and shank all in one piece, the shank is provided with a slotted end into which the blades are slipped, being held in position by a spring. The blades are double ended, and three come with each tool, being held in the hollow handle. Thus one tool gives a choice of five screwdrivers and a tack puller. A little attachment for holding screws when starting them is provided if required at a slight advance in price. The manufacturers call it a "third hand." The cap on the magazine in the handle is of hardened steel, and is meant to stand use as a hammer on occasion.

**FOR AUTOMOBILE TIRES.**—Anyone who has labored at the foot-pump to inflate a big tire on a hot day will appreciate the efforts of the Wray Pump & Register Co., of Rochester, N. Y., to supply an efficient air compressor. This company has placed on the market its answer to the pump question in the shape of a compound pump, having two barrels, set side by side, one being about double the diameter of the other. The plunger rods take the form of racks, with a pinion between them, meshing with both. The arrangement is such that when one plunger is depressed the other is elevated. The handle is attached to the plunger rod in the large cylinder. When this is pressed down a considerable volume of air is compressed into the small cylinder while its plunger is ascending. When the large plunger is raised, the small one, going down, still further compresses the air and forces it into the tire. Means are provided for throwing out the pinion and working the pump "simple" or for depressing both plungers to shorten the total length

of the air gauge with a coupling for attaching it, quickly and conveniently, to the tire valve. Once attached, a slight pressure on a button admits the air to the gauge, where the pressure is at once shown. The button released, the air is cut off, so that there is

no loss of pressure in making the test.

**MILWAUKEE MOTORS.**—Two new styles of engines have been added to the line of motors and parts for automobile and marine work formerly made by the Milwaukee Motor & Mfg. Co., whose entire plant and equipment have been taken over by the Milwaukee Motor Co., 128 Ferry street, Milwaukee, Wis., recently organized. The new



MILWAUKEE 20-H.P. OPPOSED MOTOR.

company will continue to manufacture the entire line of engines, axles, carbureters, mufflers and pumps made by its predecessors. The two new engines are a 20-horsepower double opposed motor and a 30-horsepower four-cylinder vertical motor. The 20-horsepower engine has mechanically operated valves. The gears, crankshafts, and connecting rods are "getatable" from the upper side of motor by removing the top lid of crank chamber. The pistons can be removed through the crank chamber without disturbing the cylinders, leaving the whole engine frame intact, by removing the top lid of crank chamber. Thus the entrance of dust is prevented and the oil bath for gears, shafts and connecting rods is prevented from running through the bottom of crankcase, as it would were the valves operated from the lower part of cylinder and head. The valve stem guides are unusually long and the push rods are fastened rigidly to the cam yoke, eliminating side strains on the push rods; only two cams are used to operate the valves, one operating the intake valves and the other operating both exhaust valves, making a smooth and quiet working set of valves. The valves are water jacketed. The construction of this engine makes it entirely unnecessary to crawl under the car to repair or adjust any part of the motor. The weight of this motor is 425 pounds, without transmission. Each engine

is supplied with carbureter, pipe connections for same, and circulating pump fastened to motor. The crankcase and cover are of aluminum. The over-all length is 44 inches, width 16 inches, and piston stroke 6 inches; valve lift is sufficient to insure full opening; main bearings 1 3/4 inches diameter by 3 inches in length; flywheel 20 inches in diameter, and weighs 160 pounds. When desired, this engine is fitted with planetary transmission, connected up on angle iron frame, ready to mount in the car.

**IMPROVED FUEL PUMP.**—A fuel pump for supplying gasoline or kerosene to the burners of steam vehicle boilers has been brought out by the Nash Pump Co., 19 Congress St., Boston, Mass. The pump is of the solid plunger type, the plunger being kept tight by a long stuffing box. Instead of carrying pressure in the main fuel tank, a small reservoir, containing about a pint, is used for the pressure chamber. The pump will, it is said, maintain any desired pressure in the reservoir, returning the excess fuel to the main tank when the proper pressure has been reached. The pressure is adjustable by means of a screw, which regulates the pressure on a spring, which, in turn, controls the movement of the bypass valve. The pump takes its motion from the engine crosshead, but may be disconnected at any time by a simple arrangement for pumping by hand to obtain initial pressure for starting the burner. No detachable handle is necessary. There is no float or similar device, the spring-controlled bypass being relied upon for regulating the pressure, which, the makers state, may be varied from 10 pounds to 250 pounds.

**LEATHER SPECIALTIES.**—The H. & F. Mesinger Mfg. Co., 1801-3 First avenue, New York, manufacturer of motor-cycle saddles and grips, leggings and other leather goods, has placed on the market a line of leather tire protectors. These are made, it is stated, of the best chrome-tanned leather, which will remain soft and pliable under all conditions, and may be had in a detachable form or permanently fixed to tire. In the latter case it is necessary to send tires to the factory to have the protectors vulcanized on. They are made in all sizes, from 28 by 2 1/2 to 40 by 5 inches. The treads are studded with steel rivets with protruding heads to prevent skidding. The sides of the tires are protected as well as the treads. With a view to securing absolute immunity from puncture, a series of overlapping steel plates is placed between the inner and outer bands of the protectors. Another specialty of this company is an automobile hamper in patent leather, which can be made in any shape, and is said to be impervious to dust and water. Mesinger license number plates or hangers are made of black patent leather, with or without figures, with white leather backs and steel stiffening plates. Snap hooks are provided for attachment.

**GASOLINE STORAGE.**—The gasoline storage problem has been attacked by the Van Husan & Farr Company, 520 Hammond Building, Detroit, Mich., and a system has been evolved which is believed to possess a number of unusual advantages. Briefly, the idea is to place the gasoline in tanks so constructed that by admitting water under pressure at the bottom of the tank the gasoline will be forced out at the top, the difference in specific gravity keeping the two fluids separate. Water under pressure is obtained from the usual supply mains. A great advantage claimed for this system is that the tanks never contain air or gas, the gasoline, as it is drawn out, being replaced by water. Another is that many impurities

will sink through the gasoline and then through the water, to be caught in a trap at the bottom of the tank. When a tank is to be refilled, the water is simply run off and the gasoline put in. By means of suitable piping the outlet or outlets may be placed wherever most convenient. An automatic measuring system is also supplied if desired. Any fluid lighter than water can be handled as well as gasoline.

**STEEL DOORS.**—The Columbia Steel Rolling Shutter Co., of Columbus O., manufactures a large variety of steel rolling doors, shutters and partitions, suitable for use in stores and warehouses. Detailed drawings, showing the construction, method of application and operation, as well as photographs showing these appliances in use, are given in profusion in the catalogue issued by this concern. Such fireproof devices might be used to advantage in garages, salesrooms and automobile factories.

**AUTOMOBILES FOR HIRE.**—The Automobile Livery Co., 1604 Broadway, New York, announces that it is prepared to furnish French and American touring cars, seating four to eight passengers, for use by the hour, day or trip. The machines are said to be comfortable and up to date, and in the hands of competent chauffeurs. Terms and other information may be obtained on application at the company's office.

**MOTORCYCLE TANDEM ATTACHMENT.**—The Pope Mfg. Co., Hartford, Conn., has brought out a new tandem attachment for motorcycles, which makes it possible to carry an extra rider on ordinary roads and up grades that are not too severe. This attachment will fit the Columbia, Cleveland and Tribune motorcycles, and is furnished complete with handlebars and saddle.

## INDEX TO ADVERTISERS

Acetylene Gas Illuminating Co.	39
Acme Motor Car and Repair Co.	39
Acme Motor Co.	60
Alexander & Crouch.	45
American Automobile and Power Co.	36
American Coil Co.	40
American Darracq Automobile Co.	61
American Machine Mfg. Co.	38
American Oak Leather Co.	39
American Veneer Co.	47
Anderson Mfg. Co., J. C.	43
Angier Co., The.	37
Association of Licensed Automobile Mfrs.	63
Atwood Mfg. Co.	39
Auto Body Co.	40
Auto Car Equipment Co.	45
Automobile Supply Mfg. Co.	39
Baldner Motor Vehicle Co.	61
Bartholomew Co., The.	61
Bay State Stamping Co.	37
Becker, John.	37
Biddle & Smart Co.	47
Black Diamond Automobile Co.	Cover
Bliss-Chester Co.	38
Blomstrom, F. H., Motor Co.	61
Borbeln & Co., H. F.	42
Boston Gear Works.	39
Briscoe Mfg. Co.	49
Brooklyn Automobile Co.	36
Byrne-Kingston Co.	50
Cadillac Automobile Co.	60
Central Automobile Co.	61
Chicago Battery Co.	40
Clark Carburetor Co.	45
Columbia Automobiles.	36
Continental Caoutchouc Co.	39
Covert Manufacturing Co.	39
Crane, George A.	36
Crucible Steel Casting Co.	42
Cullman Wheel Co.	39
Davis Robe Co.	59
Dayton Electrical Mfg. Co.	60
Detroit Steel Products Co.	39
Detroit & Buffalo Steamboat Co.	36
Diamond Rubber Co.	52
Dietz, R. E.	Cover

Dixon Crucible Co., Jos.	42
Dolson & Sons, John L.	65
Dow Portable Electric Co.	38
Draper Bros. Co.	37
Duerr-Ward Co.	36
Dyke, A. L.	38
Dyke Automobile Supply Co., A. L.	39
Electric Storage Battery Co.	43
Elmore Mfg. Co.	63
England, I. W.	36
Excelsior Supply Co.	37
Federal Manufacturing Co.	42
Fisk Rubber Co.	50
Ford Motor Co.	69
Forg, Peter.	37
Frasse Co., The.	37
Funke, A. H.	48
General Automobile and Repair Works.	40
Gilbert Manufacturing Co.	38
G. & J. Tire Co.	54-55
Goodrich Co., The B. F.	53
Grand, W. D.	50
Gray & Davis.	48
Grout Bros. Automobile Co.	36
Hague & Co.	37
Hardy Co., The E. R.	43
Harris Oil Co., A. W.	41
Hartford Pattern and Model Co.	42
Hartford Rubber Works.	Cover
Hawkeye Wrench Co.	44
Herz & Co.	44
Hjorth Wrench Co.	37
Hopson & Chapin Mfg. Co., The.	42
Howarth & Rogers Co.	47
Induction Coil Co.	43
Jamesville Wheel Mfg. Co.	41
Jeffery & Co., Thomas B.	Cover
Kells, W. J.	39
Kent Mfg. Works, Atwater.	37
Knox Automobile Co.	71
Lackawanna Railroad.	59
La Roche Co., F. A.	61
Leather and Brass Works.	37
Lehman Bros.	61
Light Manufacturing and Foundry Co.	42
Lobee Pump Co.	37
Locke & Co.	46
Locke Regulator Co.	39
Locomobile Co. of America, The.	62
Long Mfg. Co.	41
Lowell Model Co.	46
Manhattan Lamp Works.	48
Manufacturers' Foundry Co.	42
Matheson Motor Car Co.	Cover
Maxwell-Briscoe Motor Co.	66, 67
McCord & Co.	37
Melsel Press Mfg. Co.	42
Merriam Co., G. & C.	40
Meyrowitz, E. B.	39
Miller, Charles E.	60
Miller Knoblock Electric Co.	43
Milwaukee Auto Engine and Supply Co.	44
Moore & Son Co., M. E.	39
Morgan & Harding.	43
Morgan & Wright.	51
Moss Photo-Engraving Co.	58
Motor Car Equipment Co.	43
Motor Car Supply Co.	38
Myers, A. J.	45
Nash Pump Co.	38
National Compounding Co.	38
National India Rubber Co.	44
National Motor Vehicle Co.	38
National Sewing Machine Co.	41
Neudstadt Co., J. H.	40
Northwestern Storage Battery Co.	43
Novelty Mfg. Co.	46
Nuttall Co., R. D.	42
Oakes & Dow.	38
Ofeldt & Sons.	38
Ophthalmoscope Co.	38
Oriental Hotel.	59
Packard Electric Co.	38
Packard Motor Car Co.	68
Parish & Bingham Co.	44
Pederson, J. T.	39
Peerless Motor Car Co.	62
Pierce Engine Co.	63
Pioneer Brass Works.	42
Pittsburg Reduction Co.	42
Post & Lester Co.	40
Power, J. J.	51
Premier Motor Mfg. Co.	62
Providence Steel Casting Co.	42
Quinby Co., J. M.	47
Randall, F. E.	36
Rattan Novelty Co.	38
Reading Metal Body Co.	47
Riverside Body Factory.	47
Rochester Automatic Oilier and Supply Co.	38
Rotary Motor Vehicle Co.	45
Royal Equipment Co.	40
Royal Motor Car Co.	64
Rubav, Leon.	87
Rushmore Dynamo Works.	48
R. & C. Indicator Co.	49